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NSA PANAMA CITY  
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SITE ASSESSMENT PLAN ADDENDUM FOR AREA OF CONCERN 2 NSA PANAMA CITY FL  
4/4/2002  
TETRA TECH

TTNUS/TAL-02-027/4221-3.2

April 04, 2002

Project Number 4221

Commander, Southern Division  
Naval Facilities Engineering Command  
ATTN: Mr. Wayne Hansel (Code ES24)  
Remedial Project Manager  
2155 Eagle Drive  
North Charleston, South Carolina 29406

Reference: Clean Contract No. N62467-94-D0888  
Contract Task Order No. 0240

Subject: Site Assessment Plan Addendum for AOC2  
Coastal Systems Station Panama City  
Panama City, Florida

Dear Mr. Hansel:

Tetra Tech NUS, Inc. (TTNUS) is pleased to submit for your review and approval the Site Assessment Plan (SAP) Addendum for Area of Concern (AOC) 2 at Coastal Systems Station (CSS), Panama City, Florida. This SAP Addendum was prepared by TTNUS under the Comprehensive Long-term Environmental Action Navy (CLEAN) III Contract Number N62467-94-D-0888.

The objective of this investigation is to conduct a site assessment in accordance with Chapter 62-770 of the Florida Administrative Code (F.A.C.) of the reported fuel releases that have occurred at AOC2 and to delineate the extent of petroleum impact to site soil and groundwater. The work will include advancing soil borings and installing monitoring wells for the collection and analysis of soil and groundwater samples. Following the evaluation of the investigation data, a Site Assessment Report (SAR) will be submitted to provide a summary of the findings from the investigation and make recommendations for future actions at the site.

## **SITE HISTORY**

AOC2 was defined by the former location of Fuel Oil Tank No. 11, which was a 420,000 gallon aboveground storage tank (AST), and the associated transfer piping (ABB Environmental Services Inc., RCRA Facility Investigation Report, 1995). Tank 11 was part of a petroleum storage and distribution facility that included pumphouses and a fuel dispensing station with other storage tanks (Figure 1).

Tank 11 was constructed in 1943 and was originally used to store diesel fuel. Petroleum products were transferred to Tank 11 from the South Dock via a 6 inch underground transfer line connected a pump house at the South Dock. A smaller 3 inch transfer line connected Tank 11 to a pumphouse located approximately 100 feet to the northwest of the tank (the current location of Building 543). A circular earthen berm spaced approximately 60 feet from the tank provided secondary containment.

The pumphouse associated with Tank 11 was used to distribute fuel from Tank 11 and tanks associated with the former fuel dispensing facility located approximately 200 feet to the northwest of Tank 11 (the current location of Building 400). Two parallel 3 inch transfer lines distributed diesel fuel and gasoline from the pumphouse to the South Dock. Additional smaller diameter fuel lines may have been used to distribute fuel to other locations in the vicinity of Tank 11.

Approximately 50,000 gallons of diesel fuel were reportedly lost from the tank system in 1953. The exact location of the leak and whether or not the underground piping had failed is unknown. Tank 11 was completely refurbished in 1957, including replacement of 28 bottom plates. The tank was then reportedly used to store gasoline, aviation fuel, diesel fuel, and waste oil. Numerous small leaks, primarily at the tank seams, were reported to have occurred both before and after the tank was refurbished. In the mid 1960s, an estimated 10,000 gallons of oil were released from ruptured fuel transfer lines located between the dock and storage tank. Following the rupture, seepage of diesel oil was observed in Alligator Bayou at the South Dock bulkhead.

Tank 11 and the containment berm were removed in 1979. Reportedly, the bottom plates of the tank had completely deteriorated. The transfer piping from the tank wall to the containment berm was removed. The remaining piping was capped and abandoned in place. Based on utility drawings of the area, the fuel dispensing station and the fuel pumphouse were apparently removed at some time after 1984. Building 400 was built in the area of the former fuel dispensing station. Building 543 has recently been constructed in the area of the former fuel pumphouse.

## **PREVIOUS INVESTIGATIONS**

In July 1997, CSS personnel detected a fuel release into Alligator Bayou. During the investigation of the fuel release, petroleum product was detected entering a storm sewer drain junction box located downgradient of AOC2 (Figure 1). The storm sewer drainpipe runs beneath Site 333 and adjacent to Tank 307 before entering an outfall in the sea wall at Alligator Bayou, where the initial fuel release was detected.

Site assessment activities were conducted in 1998 to determine the source of the free product observed in the storm sewer and Alligator Bayou (Preliminary Assessment Letter Report for Site AOC2/SWMU1 at CSS Panama City, TTNUS, 1998). Approximately 29 soil borings, nine monitoring wells and five piezometers were installed and sampled to evaluate the nature and extent of petroleum impacted soil and groundwater in the vicinity of AOC2. Free product was detected in one of the monitoring wells, PCY-AOC2-MW07, which is located approximately 100 feet to the southwest of the former location of Tank 11 and adjacent to the parallel 3 inch transfer lines (Figure 1).

Additional soil and groundwater screening were conducted in 2000 to evaluate the extent of free product in the vicinity of PCY-AOC2-MW07 and to provide a preliminary assessment of the transfer piping, evaluating the need for a pipeline closure assessment (Preliminary Assessment Letter Report for AOC2/SWMU1 at CSS Panama City, Florida, TTNUS, 2000). Twenty-four soil borings were advanced in the AOC2/SWMU1 study area to collect soil samples for headspace screening, soil and groundwater samples for analysis by an onsite laboratory. A total of nine monitoring wells were installed during this site investigation. Five of the wells were completed as permanent wells and four of the wells were abandoned. The soil and groundwater screening results from this investigation indicate that petroleum impact has occurred in the area south and southwest of AOC2. The area of petroleum impacted soil and groundwater apparently extends to the north, west, and east of the area previously investigated.

A geophysical survey was conducted in February 2001 by Florida Spill Response Corporation (FSRC) to locate buried portions of the fuel lines for cleaning and capping (Ground Penetrating Radar Survey at the Department of the Navy CSS, Panama City, Florida, FSRC, March 2001). The ends of the identified pipelines were then excavated for cleaning and capping (Closure Report, CSS Fuel Pipeline Closure, FSRC, July 2001). The north end of the 6 inch transfer line was excavated adjacent to the south side of Building 370. Excavation personnel noted strong petroleum odors in this area (Figure 1). The south end of the 6 inch transfer line was excavated adjacent to the north side of Building 431. The north ends of the dual 3 inch transfer lines were excavated adjacent to the west side of Building 543. Excavation personnel reported that construction workers excavating during the construction of Building 543 had encountered free petroleum product in a utility excavation (Figure 1). Attempts to locate the southern end of the 3 inch transfer lines in the vicinity of Building 431 were unsuccessful. The 3 inch lines were cut where they were exposed in a storm drain to the southwest of Building 307. A vacuum truck was used to remove the contents of the lines to the south of the storm drain. The western line was empty and the eastern line contained approximately 100 gallons of diesel fuel.

A pipeline closure assessment was conducted in accordance with Chapter 62-761 of the F.A.C. of the fuel distribution lines that have been located, cleaned, and capped at AOC2 (as described in the July 2001 Closure Report issued by FSRC). Twenty-one soil borings were advanced to collect soil samples for headspace screening and selected soil samples were sent for laboratory analysis. Samples were collected from locations adjacent to the pipeline sections, which were traced in the subsurface with a Fisher M-scope magnetic locator. Two temporary monitoring wells were installed at the site following the soil boring investigation. One temporary well, TW-1, was installed on the west side of Building 543, in the vicinity of the area where free product was previously reported in a construction excavation. The second temporary well, TW-2, was installed at the southeast corner of Building 370, adjacent to the area where petroleum odors were reported from the excavation at the north end of the 6 inch transfer line.

## **PREVIOUS INVESTIGATION RESULTS**

Figures 2 and 3 show soil and groundwater sampling locations from the previous site investigations. Soil sampling locations are shown on Figure 2. Soil exceedances are indicated at the sample locations where the corrected Organic Vapor Analyzer (OVA) headspace screening response was greater than 50 ppm and/or laboratory analytical results indicated contaminant concentrations greater than one or more Soil Cleanup Target Level (SCTL). Groundwater sampling locations are shown on Figure 3. Groundwater exceedances are indicated at the direct push technology (DPT) locations or monitoring wells where field or offsite laboratory analytical results indicated contaminant concentrations greater than one or more Groundwater Cleanup Target Level (GCTL).

## **PROPOSED ASSESSMENT ACTIVITIES**

The site assessment activities will include soil and groundwater sampling using DPT sampling methods and onsite mobile laboratory analysis of soil and groundwater samples. Selected soil samples will be submitted to an offsite laboratory for confirmatory analysis. The proposed locations of the DPT soil borings are provided on Figure 4. Monitoring well locations will be determined following the DPT investigation. The site assessment activities will be conducted in accordance with the requirements of 62-770 F.A.C using the procedures and processes specified in the SAP previously approved for petroleum site investigations at CSS Panama City (Site Assessment Plan for Sites 98, 307, 363, and AOC-2/SWMU1, TTNUS, April 1998).

### **Soil Borings**

Up to forty soil borings will be advanced to collect soil samples for headspace screening and laboratory analysis. The soil borings will be advanced using a DPT rig. The initial 4 feet of each soil boring will be advanced with a hand auger of suitable diameter in order to clear underground utilities. Soil samples from below 4 feet will be collected using DPT soil samplers with new plastic liners. Soil borings will be advanced in 2 or 4 foot increments, depending on the length of the sampler, until groundwater is encountered.

Soil samples from each boring will be screened with an OVA - Flame Ionization Detector (FID) using the headspace screening method described in the SAP. One soil sample will be collected from each boring from the interval above the water table that exhibits the highest OVA response. This sample will be screened using an on-site mobile laboratory to analyze for benzene, toluene, ethyl-benzene, xylenes (BTEX); naphthalene and Diesel Range Organics (DRO). In accordance with Rule 62-770.600(3)(e), soil samples will be collected from a minimum of three soil borings for fixed base laboratory analysis to confirm the OVA/mobile lab results. The boring locations and sample intervals will be selected to coincide with samples that exhibit high, medium and low field screening results during the soil vapor survey. The samples will be analyzed for constituents of the Kerosene Analytical Group (KAG) as defined in Chapter 62-770, F.A.C.

Approximately twenty soil borings will be advanced in the vicinity of the former tank location, particularly around Buildings 370 and 543. Up to six additional soil borings will be advanced in the parking lot area to the west of areas of AOC2 which have previously been investigated. One soil boring will be advanced in the area between AOC2 and Buildings 307 and 333 to assist in determining where the groundwater plumes intermingle.

### **Groundwater Field Screening**

Subsequent to collection of soil samples, each soil boring will be advanced approximately 2 to 3 feet into the water table and a groundwater sample collected for on-site mobile laboratory screening for BTEX; naphthalene and DRO. Following soil and groundwater sampling, each of the soil borings shall be backfilled to near land surface. Where borings were advanced in paved areas, the pavement will be patched with like material and restored flush to grade.

### **Monitoring Well Installation**

Based on the data collected during the DPT soil and groundwater investigation, up to nine shallow monitoring wells and two deep monitoring wells will be installed at the site. Monitoring wells already installed at the site will be incorporated into the monitoring program where appropriate.

The shallow monitoring wells will be installed using a hollow-stem auger (HAS) drill rig and suitable tools. The initial 4 feet of each well boring will be advanced with a hand auger of suitable diameter in order to clear underground utilities. Total depth of each monitoring well boring will be based on the depth to groundwater at the well location. The shallow monitoring wells will be installed to bracket the water table, which is anticipated to occur at approximately 6 to 8 feet below grade.

The new monitoring wells will be constructed of new, plastic-wrapped well materials. Each well will be constructed with 2 inch inside diameter (ID) schedule 40 poly vinyl chloride (PVC) well screen and riser. The shallow monitoring well screens will be 10 feet in length with factory machined 0.010 inch slots. A filter pack consisting of clean U.S. Standard Sieve No. 20/30 silica sand will be installed around each shallow well screen. The filter pack will be installed through the augers as the augers are removed from the boring. A tremie pipe will be used to facilitate the filter pack placement. The filter pack will be extended from 0.5 feet below the well screen to approximately 1.0 foot above the top of the well screen. A

1 foot sand seal consisting of U.S. Standard Sieve Size No. 30/65 will be placed on top of the filter pack. The remainder of the borehole annulus will be grouted to the surface with a cement/bentonite mixture.

The deep monitoring wells will be installed inside approximately 20 feet of 6 inch ID surface casing to a total depth of 35 feet below land surface (bls). Each surface casings will consist of 6 inch ID PVC riser. Each surface casing will be installed using 8.25 inch HSA drilling techniques. Each surface casing will be installed to a depth of approximately 20 feet bls and tremie-grouted in place with a cement/bentonite mixture. A minimum of 24 hours will be allowed to pass before the 2 inch ID monitoring well is installed within the surface casing.

Rotary wash methods will be used to drill-out the surface casing and reach the total depth of 35 feet bls. Each deep monitoring well will be constructed of schedule-40, flush-joint, threaded, 2 inch ID PVC riser with 5 feet of 0.01-inch slotted screen. After the monitoring well is placed, a filter pack consisting of clean U.S. Standard Sieve No. 20/30 silica sand will be installed around the well screen. The filter pack will be installed through tremie pipe to ensure that the filter pack is properly placed and no bridges occur within the surface casing. Potable water may be used to facilitate the filter pack placement if necessary. The filter pack will be extended from 0.5 feet below the well screen to a minimum of 2.0 feet above the top of the well screen. A 2 foot sand seal consisting of U.S. Standard Sieve Size No. 30/65 will be placed on top of the filter pack. The remainder of the borehole annulus will be grouted to the surface with a cement/bentonite mixture.

A protective steel casing will be flush-mount installed around each monitoring well. The flush-mount covers will be 8 inch round, traffic-bearing, security vaults with sealing gasket. A 2 foot by 2 foot (saw-cut or saw-scored and jack hammered hole) by 6 inch thick concrete apron will be constructed around each flush mount monitoring well. The concrete mix used for the apron shall obtain a minimum 28-day compressive strength of 3000 pounds per square inch. The flush mounted casings shall be completed 1-inch above existing grade and the apron tapered to be flush with existing grade at the edges such that water will run off of the apron.

Each monitoring well will be developed with a centrifugal pump or an appropriately decontaminated submersible pump and tubing. Well development will be continued until reasonably clear water is produced from the monitoring wells and filed parameters including pH, conductivity, and temperature are stable.

### **Groundwater Sampling**

Groundwater samples will be collected from the site monitoring wells for fixed base laboratory analysis. The monitoring wells will be purged and sampled using the low flow method described in the SAP. The groundwater samples will be analyzed for the KAG, as defined in Chapter 62-770, F.A.C. The laboratory analytical methods to be used during this investigation are provided in Table 1.

### **Groundwater Level Measurements**

A synoptic round of depth to groundwater measurements will be made from available site monitoring wells at the time of the groundwater sampling event. The horizontal location and top of casing elevation of each permanent monitoring well will be surveyed and the horizontal location and ground surface elevation for all sampling locations (including monitoring wells and piezometers) will be surveyed. All locations will be referenced to site features (building corners, etc.) by a state-licensed surveyor.

Mr. Wayne Hansel  
SOUTHNAVFACENGCOM  
April 4, 2002 - Page 6 of 7

**Additional Site Assessment Tasks**

The following site assessment tasks will be conducted in accordance with the applicable sections of the April 1998 "Site Assessment Plan for Sites 98, 307, 363 and AOC2/ SMWU 1".

- Equipment Decontamination
- Waste Handling
- Sample Handling, Sample Identification, Sample Packaging, and Shipping/Sample Custody
- Quality Control Samples
- Field Measurements and the Field QA/QC Program
- Record Keeping
- Site Management and Base Support

**REPORTING**

Following completion of the field assessment activities and laboratory analysis, a SAR will be prepared in accordance with the requirements of 62-770 F.A.C. The SAR will provide a description of the site assessment activities, a summary of the findings from the investigation and make recommendations for future actions at the site.

If you have any questions regarding this plan or require further information, please contact me at (813) 806-0202.

Sincerely,



William Olson, P.G.  
Professional Geologist  
License Number: PG 2031  
Date: 04/04/02



Paul E. Calligan, P.G.  
Task Order Manager

WDO/wdo

Enclosures

c: Arturo McDonald, CSS  
Debbie Wroblewski (Cover Letter Only)  
Mark Perry/File (Unbound)

## TABLE

**TABLE 1**

**FIELD INVESTIGATION ENVIRONMENTAL SAMPLE SUMMARY**

**SITE AOC 2**

**COASTAL SYSTEMS STATION**

**PANAMA CITY, FLORIDA**

Parameter	Method (aqueous/soil)	No. Soils (Env.)	No. Soils (IDW)	No. Soil Dups	No. Aqueous (Env.)	No. Aqueous (IDW)	No. Aqueous Dups	Field Blanks	Rinsate Blanks	Trip Blanks
VOAs, VOHs & MTBE	SW-846 8021B	5	0	0	12	0	1	0	2	4
EDB	SW-846 504.1	0	0	0	12	0	1	0	2	0
PAHs	SW-846 8310	5	0	0	12	0	1	0	2	0
TRPH	FL-PRO	5	0	0	12	0	1	0	2	0
Total Lead	SW-846 6010B/7000A series	0	0	0	12	0	1	0	2	0
RCRA Metals	SW-846 6010B/7000A series	0	0	0	0	0	0	0	0	0

VOA - Volatile Organic Aromatics

VOH - Volatile Organic Halocarbons

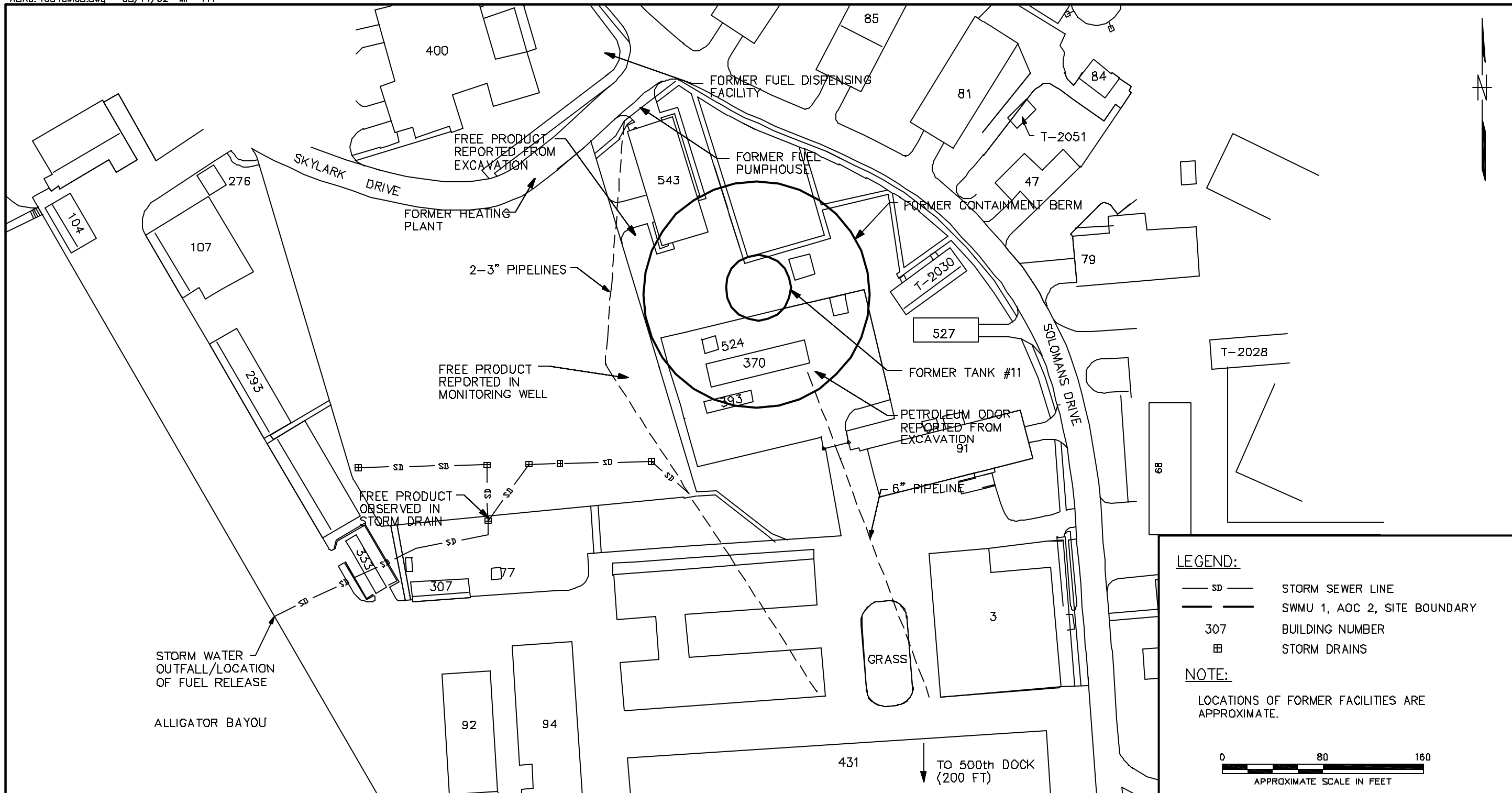
MTBE - Methyl Tert Butyl Ether


PAH - Polynuclear Aromatic Hydrocarbons

TRPH - Total Recoverable Petroleum Hydrocarbons

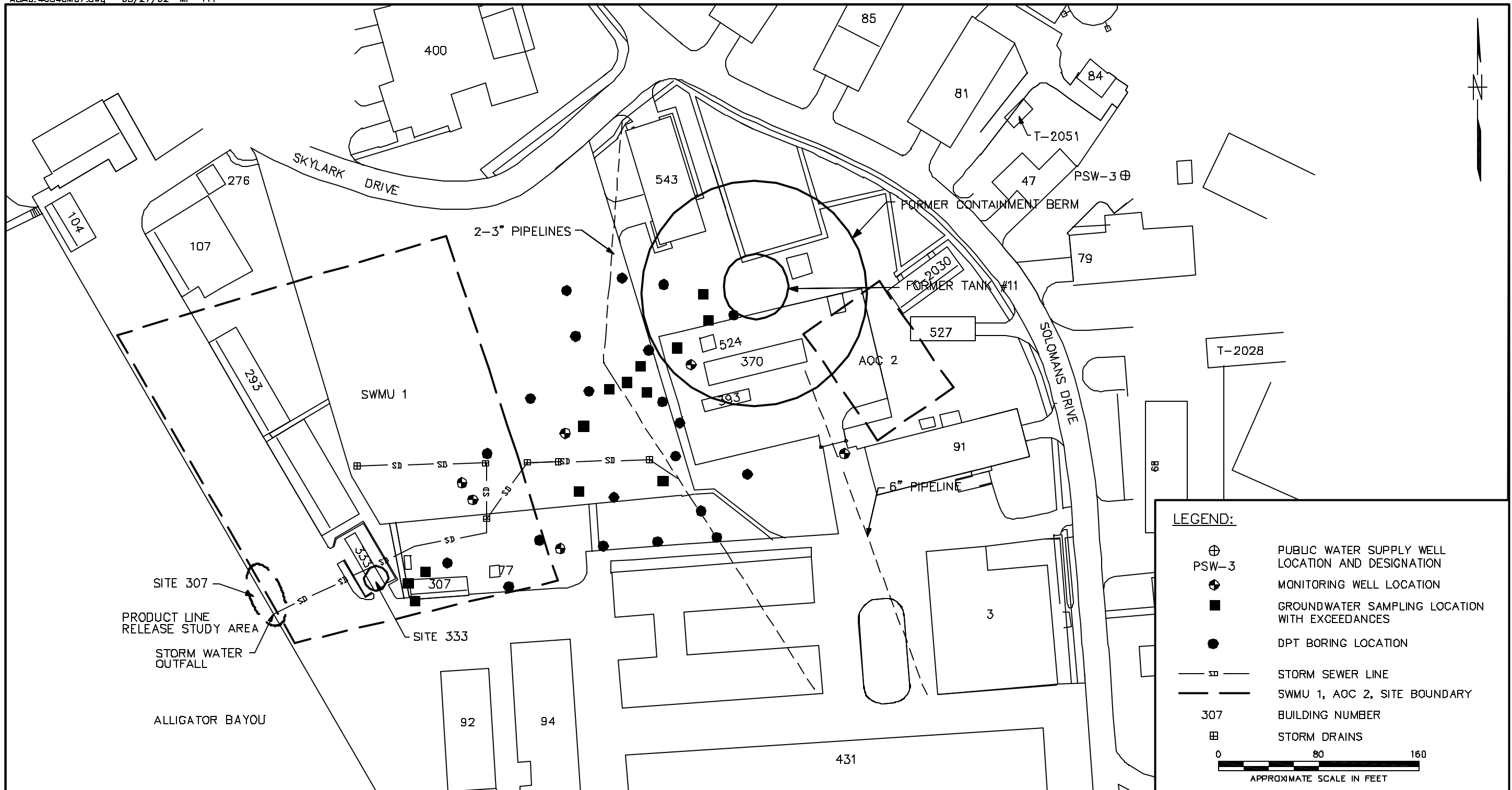
EDB - Ethylene Dibromide


## FIGURES

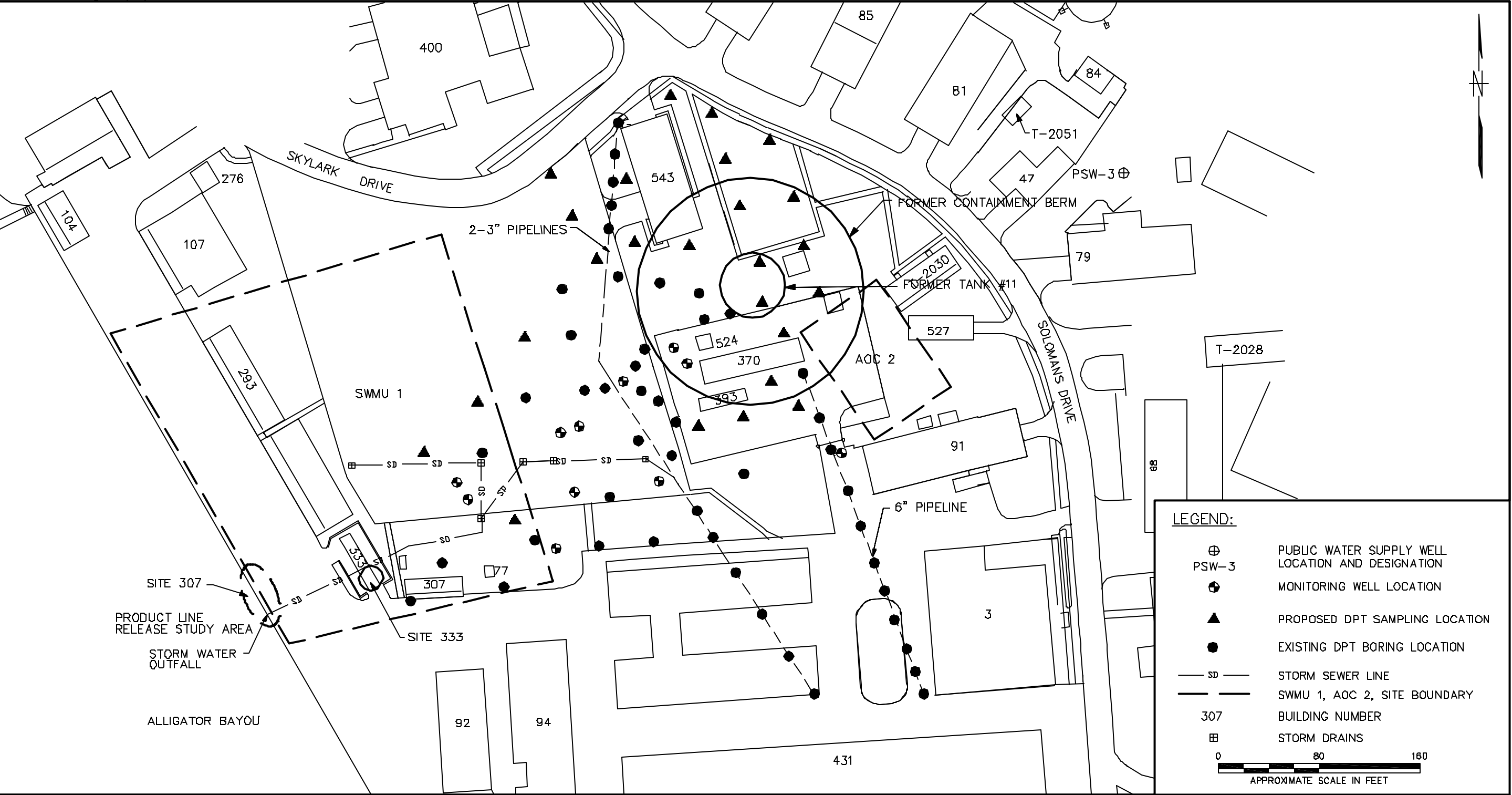


NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES	DRAWN BY MF	DATE 3/14/02		FORMER LOCATION OF TANK #11 AND ASSOCIATED FACILITIES AQC2 SITE ASSESSMENT PLAN COASTAL SYSTEMS STATION PANAMA CITY, FLORIDA	CONTRACT NO. 4054	
							CHECKED BY	DATE			APPROVED BY	DATE
							COST/SCHED-AREA				APPROVED BY	DATE
							SCALE				DRAWING NO.	REV.
							AS NOTED				FIGURE 1	0





NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES	DRAWN BY MF	DATE 3/15/02		GROUNDWATER EXCEEDANCES AOC2 SITE ASSESSMENT PLAN COASTAL SYSTEMS STATION PANAMA CITY, FLORIDA	CONTRACT NO. 4054	
							CHECKED BY	DATE			APPROVED BY	DATE
							COST/SCHED-AREA				APPROVED BY	DATE
							SCALE AS NOTED				DRAWING NO. FIGURE 3	REV. 0



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES	DRAWN BY	DATE	PROPOSED DPT SAMPLING LOCATIONS AOC2 SITE ASSESSMENT PLAN COASTAL SYSTEMS STATION PANAMA CITY, FLORIDA		CONTRACT NO. 4054	
							MF	3/15/02			APPROVED BY	DATE
							CHECKED BY	DATE			APPROVED BY	DATE
							COST/SCHED-AREA				DRAWING NO. FIGURE 4	REV. 0
							SCALE	AS NOTED				

**Health and Safety Plan**  
for  
**Site Assessment at AOC2 and**  
**Annual Groundwater Sampling at**  
**G-300**

**Coastal Systems Station Panama City**  
**Panama City, Florida**



**Southern Division**  
**Naval Facilities Engineering Command**

**Contract Number N62467-94-D-0888**

**Contract Task Order 0240**

April 2002

**HEALTH AND SAFETY PLAN  
FOR  
SITE ASSESSMENT AT AOC2 AND  
ANNUAL GROUNDWATER SAMPLING AT G-300**

**COASTAL SYSTEMS STATION PANAMA CITY  
PANAMA CITY, FLORIDA**

**COMPREHENSIVE LONG-TERM  
ENVIRONMENTAL ACTION-NAVY (CLEAN) CONTRACT**

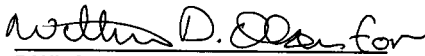
**Submitted to:  
Southern Division  
Naval Facilities Engineering Command  
2155 Eagle Drive  
North Charleston, South Carolina 29406**

**Submitted by:  
Tetra Tech NUS, Inc  
661 Andersen Drive Foster Plaza 7  
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**CONTRACT NUMBER N62467-94-D-0888  
CONTRACT TASK ORDER 0240**

**APRIL 2002**

**PREPARED UNDER THE SUPERVISION OF:**

  
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**APPROVED FOR SUBMITTAL BY:**

  
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CLEAN HEALTH AND SAFETY MANAGER  
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## 1.0 INTRODUCTION

**Authorization:** This Health and Safety Plan (HASP) and the work described within are completed under the authorization of:

**Contract:** Comprehensive long-term Environmental Action Navy (CLEAN) III

**Contract Number:** N62467-94-D-0888

**Contract Task Order:** 0201/0214

**Statement of Work:** Site Assessment at Area of Concern (AOC) 2, Annual Groundwater sampling at Building G-300

**Proposed Dates of Work:** March 2002

**Application:** This HASP has been written to encompass site activities that are to be conducted at AOC2 and annual groundwater sampling at Building G-300 of Coastal System Station (CSS) Panama City Panama City, Florida. Activities to be conducted as per this HASP are defined in detail in Section 3.0 & 3.1.

**Compliance:** The elements of this HASP are intended to be in compliance with the requirements established by:

- Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response (HAZWOPER)"
- Applicable sections of 29 Code of Federal Regulations (CFR) 1926 "Safety and Health Regulations for Construction."
- Tetra Tech NUS, Inc. (TTNUS) Health and Safety Program

This HASP has been developed to provide health and safety practices and procedures for TTNUS and subcontractor personnel to follow while engaged in investigatory activities at the Naval CSS in Panama City, Florida. This HASP must be used in conjunction with the TTNUS Health and Safety Guidance Manual. Both of these documents must be present at the site during the performance of all site activities. The Guidance Manual provides detailed information pertaining to the HASP as well as applicable TTNUS Standard Operating Procedures (SOPs). This HASP and the contents of the Guidance Manual were developed to comply with the requirements stipulated in 29 CFR 1910.120 (OSHA's Hazardous Waste Operations and Emergency Response Standard).

This HASP has been developed using the latest available information regarding known or suspected chemical contaminants and potential physical hazards associated with the proposed work at the site. The HASP will be modified if new information becomes available. All changes to the HASP will be made with

the approval of the TTNUS Site Safety Officer (SSO) and the TTNUS Clean Health and Safety Manager (HSM). Requests for modifications to the HASP will be directed to the SSO who will determine whether to make the changes. The SSO will notify the Task Order Manager (TOM), who will notify all affected personnel of changes.

## **1.1 KEY PROJECT PERSONNEL AND ORGANIZATION**

This section defines responsibility for site safety and health for TTNUS and subcontractor employees engaged in onsite activities. Personnel assigned to these positions will exercise the primary responsibility for all onsite health and safety. These persons will be the primary points of contact for any questions regarding the safety and health procedures and the selected control measures that are to be implemented for onsite activities.

- The TTNUS TOM is responsible for the overall direction of health and safety for this project.
- The Project Health and Safety Officer (PHSO) is responsible for developing this HASP in accordance with applicable OSHA regulations. Specific responsibilities include:
  - Providing information on site contaminants and physical hazards associated with the site
  - Establishing air monitoring and decontamination procedures
  - Assigning personal protective equipment
  - Determining emergency response procedures and emergency contacts
  - Stipulating training requirements and reviewing appropriate training and medical surveillance certificates
  - Providing standard work practices to minimize potential injuries and exposures associated with hazardous waste work.
- The TTNUS Field Operations Leader (FOL) is responsible for implementation of the HASP with the assistance of an appointed SSO. The FOL manages field activities, executes the work plan, and enforces safety procedures as applicable to the work plan.
- The SSO supports site activities by advising the FOL on all aspects of health and safety on-site. These duties may include:
  - Coordinates all health and safety activities with the FOL
  - Selects, applies, inspects, and maintains personal protective equipment (PPE)

- Establishes work zones and control points
  - Implements air monitoring program for onsite activities
  - Verifies training and medical clearance of onsite personnel status in relation to site activities
  - Implements Hazard Communication and Respiratory Protection Programs
  - Coordinates emergency services.
  - Provides site specific training for all on-site personnel
  - Investigates all accidents and injuries
- Compliance with the requirements stipulated in this HASP is monitored by the SSO and coordinated through the TTNUS CLEAN HSM.
- In some cases one person may be designated responsibilities for more than one position. For example, at CSS, the FOL will also be responsible for SSO duties.

## 1.2 SITE INFORMATION AND PERSONNEL ASSIGNMENTS

**Site Name:** Coastal Systems Station  
Panama City, Florida

**Client Contact:** Arturo McDonald  
**Phone Number:** (850) 234-4773

### **Project Team:**

#### **Tetra Tech NUS Personnel:**

Paul Calligan

TBD

TBD

Matthew M. Soltis, CIH, CSP

Donald J. Westerhoff, CSP

#### **Discipline/Tasks Assigned:**

Task Order Manager (TOM)

Field Operations Leader (FOL)

Site Safety Officer (SSO)

CLEAN Health and Safety Manager (HSM)

Project Health and Safety Officer (PHSO)

#### **Other Potential Tetra Tech NUS Project Personnel:**

TBD

Field Geologist

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

#### **Non-Tetra Tech NUS Personnel**

#### **Affiliation/Discipline/Tasks Assigned**

TBD

DPT/Drilling subcontractor(s)

#### **Other TtNUS personnel:**

#### **Affiliation/Discipline/Tasks Assigned:**

Tom Patton

Equipment Manager

\_\_\_\_\_

\_\_\_\_\_

Hazard Assessments (for purposes of 29 CFR 1910.132) and HASP preparation for Revision 0 conducted by:

Donald J. Westerhoff, CSP

## **2.0 EMERGENCY ACTION PLAN**

### **2.1 INTRODUCTION**

This section has been developed as part of a preplanning effort to direct and guide field personnel in the event of an emergency. All site activities will be coordinated with Base Emergency Services prior to commencement. In the event of an emergency, which cannot be mitigated using onsite resources, personnel will evacuate to a safe place of refuge and the appropriate emergency response agencies will be notified. It has been determined that the majority of potential emergency situations would be better supported by outside emergency responders. Based on this determination, TTNUS and subcontractor personnel will not provide emergency response support beyond the capabilities of onsite response. Workers who are ill or who have suffered a non-serious injury may be transported by site personnel to nearby medical facilities, provided that such transport does not aggravate or further endanger the welfare of the injured/ill person. The emergency response agencies listed in this plan are capable of providing the most effective response, and as such, will be designated as the primary responders. These agencies are located within a reasonable distance from the area of site operations, which ensures adequate emergency response time. CSS Security will be notified anytime outside response agencies are contacted. This Emergency Action Plan conforms to the requirements of 29 CFR 1910.38(a), as allowed in 29 CFR 1910.120(I)(1)(ii).

TTNUS will provide the following response measures:

- Incipient stage fire fighting support and prevention
- Incipient spill control and containment measures and prevention
- Removal of personnel from emergency situations
- Initial medical support for injuries or illnesses requiring basic first-aid
- Site control and security measures as necessary

### **2.2 PRE-EMERGENCY PLANNING**

Through the initial hazard/risk assessment effort, emergencies resulting from chemical, physical, biological and fire hazards are the types of emergencies, which could be encountered during site activities.

To minimize and eliminate the potential for these emergency situations, pre-emergency planning activities will include the following (which are the responsibility of the SSO and/or the FOL):

- Coordinating with Base Emergency Response personnel to ensure that TTNUS emergency action activities are compatible with existing emergency response procedures.
- Establishing and maintaining information at the project staging area (Support Zone) for easy access in the event of an emergency. This information will include the following:
  - Chemical Inventory (used on-site), with Material Safety Data Sheets (MSDSs).
  - On-site personnel medical records (Medical Data Sheets).
  - A logbook identifying personnel on site each day.
  - Hospital route maps with directions (these should also be placed in each site vehicle)

The TTNUS FOL will be responsible for the following tasks:

- Identifying a chain of command for emergency action.
- Educating site workers to the hazards and control measures associated with planned activities at the site, and to provide early recognition and prevention where possible.

## **2.3 EMERGENCY RECOGNITION AND PREVENTION**

### **2.3.1 Recognition**

Foreseeable emergency situations, which may be encountered during site activities, will generally be recognized by visual observation. Visual observation is primarily relevant for physical hazards that may be associated with the proposed scope of work. Visual observation will also play a role in detecting some chemical hazards. To adequately recognize chemical exposures, site personnel must have a clear knowledge of signs and symptoms of exposure associated with site contaminants. This information is provided in Table 6-1 of this HASP. Tasks to be performed at the site, potential hazards associated with those tasks, and the recommended control methods are discussed in detail in Section 5.0 and 6.0. Additionally, early recognition of hazards will be supported by daily site surveys to eliminate any situation predisposed to an emergency. The FOL and the SSO will be responsible for performing surveys. Site surveys will be conducted at all work locations prior to the commitment of resources and personnel. This will be done for the purpose of removing or barricading identified physical hazards. Additionally, site surveys will be conducted at least once a week at all resource/staging areas. All site surveys conducted during this effort will be documented in the Field Operations Logbook.

The above actions will provide early recognition for potential emergency situations, and allow TtNUS to implement necessary control measures. However, if the FOL and the SSO determine that control measures are not sufficient to eliminate the hazard, TTNUS will withdraw from the site and notify the appropriate response agencies listed in Table 2-1.

### **2.3.2      Prevention**

TTNUS and subcontractor personnel will minimize the potential for emergencies by following the Health and Safety Guidance Manual and ensuring compliance with the HASP and applicable OSHA regulations. Daily site surveys will also assist in prevention of illness/injuries when hazards are recognized early and control measures initiated.

## **2.4            SAFE DISTANCES AND PLACES OF REFUGE**

In the event that the site must be evacuated, all personnel will immediately stop activities and report to the designated safe place of refuge. Safe places of refuge will be identified prior to the commencement of site activities and will be conveyed to personnel as part of issuing a Safe Work Permit (SWP) to conduct Exclusion Zone activities within an identified area. As part of this issuance, a safety meeting will be conducted to preview hazards and control measures identified on the SWP and through the site survey for that particular area. Whenever possible, the safe place of refuge will also serve as the telephone communications point for that area. During an evacuation, personnel will remain at the refuge location until directed otherwise by the TTNUS FOL or the on-site Incident Commander of the Emergency Response Team. The FOL or the SSO will take a head count at this location to account for and to confirm the location of all site personnel. Emergency response personnel will be immediately notified of any unaccounted personnel.

## **2.5            EVACUATION ROUTES AND PROCEDURES**

An evacuation to the identified refuge location will be initiated whenever the health, safety or welfare of site workers is compromised. Specific examples of conditions that may initiate an evacuation include (but are not limited to) the following: severe weather conditions; a fire or explosion; readings on monitoring instruments indicating levels of contamination that are greater than instituted action levels; and personnel showing signs or symptoms of overexposure to potential site contaminants. In the event of an evacuation, personnel will proceed immediately to the designated place of refuge unless doing so would further jeopardize the welfare of workers. In such an event, personnel will proceed to a designated alternate location and remain until further notification from the TTNUS FOL.

Evacuation procedures will be discussed prior to the initiation of any work at the site. Evacuation routes from the site and safe places of refuge are dependent upon the location at which work is being performed and the circumstances under which an evacuation is required. Additionally, site location and meteorological conditions (i.e., wind speed and direction) may dictate evacuation routes. As a result, assembly points will be selected and communicated to the workers relative to the site location where work is being performed.

## **2.6 DECONTAMINATION PROCEDURES/EMERGENCY MEDICAL TREATMENT**

During an evacuation, decontamination procedures will be performed only, if doing so does not further jeopardize the welfare of site workers. However, it is unlikely that an evacuation would occur at this site which would require workers to evacuate the site without first performing decontamination procedures. TTNUS will provide medical treatment to the level of first aid. Personnel requiring treatment greater than first aid will constitute an emergency situation for which the appropriate agency must be notified. First-aid kits will be maintained on-site and accessible to all field personnel during operations as described within this document

## **2.7 EMERGENCY ALERTING AND ACTION/RESPONSE PROCEDURES**

TTNUS personnel will be working in close proximity to each other at CSS. As a result, hand signals, voice commands, and line of site communication will be sufficient to alert site personnel of an emergency. When project tasks are performed simultaneously on different sites, vehicle horns will be used to communicate emergency situations.

If an emergency warranting evacuation occurs, the following procedures are to be initiated:

- Initiate the evacuation via hand signals, voice commands, line of site communication, or vehicle horns. The following signals shall be utilized when communication via vehicle horn is necessary:

HELP	three short blasts	( ■ ■ ■ )
EVACUATION	three long blasts	( ■ ■ ■ )

- Report to the designated refuge point.

- Describe to the FOL (FOL will serve as the Incident Coordinator) pertinent incident details. Once all personnel are evacuated, appropriate response procedures will be enacted to control the situation.

In the event that site personnel cannot mitigate the hazardous situation, the FOL and SSO will enact emergency notification procedures to secure additional assistance in the following manner:

- Dial 911 or call other emergency contacts (Table 2-1) and report the incident. Give the emergency operator the location of the emergency, the type of emergency, the number of injured, and a brief description of the incident. Stay on the phone and follow the instructions given by the operator. The operator will then notify and dispatch the proper emergency response agencies.

## **2.8 PERSONAL PROTECTION EQUIPMENT AND EMERGENCY EQUIPMENT**

A first aid kit, eye wash units (or bottles of disposable eyewash solution) and fire extinguishers (strategically placed) will be maintained on-site and shall be immediately available for use in the event of an emergency. This equipment will be located in the field office as well as in each site vehicle. First aid will only be administered by personnel holding current certification. At least one first aid kit supplied with equipment to protect against bloodborne pathogens should be available onsite if personnel will administer first aid.

## **2.9 EMERGENCY CONTACTS**

Prior to initiating field activities, all personnel will be thoroughly briefed on the emergency procedures to be followed in the event of an accident. Table 2-1 provides a list of emergency contacts and their associated telephone numbers. This table must be posted where it is readily available to all site personnel. Facility maps should also be posted showing potential evacuation routes and designated meeting areas.

**TABLE 2-1  
EMERGENCY CONTACTS  
COASTAL SYSTEMS STATION  
PANAMA CITY, FLORIDA**

<b>CONTACT</b>	<b>PHONE NUMBER</b>
EMERGENCY (Police, Fire, and Ambulance Services)	911
Bay Medical Center (Primary Hospital)	(850) 769-1511
Seawind Medical Center (Alternate Hospital)	(850) 872-9701
Navy Onsite Representative at Coastal Systems Station, Panama City Arturo McDonald	(850) 234-4773
Coastal Systems Safety Office	TBD
Chemtrec National Response Center	(800) 424-9300 (800) 424-8802
TtNUS Office on Base FOL TDB	TBD
TtNUS, Tallahassee Office	(850) 385-9899
TtNUS, Pittsburgh Office	(412) 921-7090
Health and Safety Manager Matthew M. Soltis, CIH, CSP	(412) 921-8912
Project Health and Safety Officer Donald J. Westerhoff, CSP	(412) 921-7281
Task Order Manager Paul Calligan	(813) 806-0405
Utilities Arturo McDonald	(850) 234-4774

## **2.10 EMERGENCY ROUTE TO HOSPITAL**

### **Directions to Bay Medical Center (Primary)**

Take right out of CSS. Go over bridge on US 98. Follow US 98 to Cove Blvd (SR 77). Turn right on Cove and go south to 7th Street. Turn left on 7th. Hospital will be on right.

### **Directions to Seawind Medical Clinic (Alternate)**

The alternate source of medical assistance is Seawind Medical Clinic. Directions to this hospital are:

Take right out of CSS. Go over the bridge on US 98. Follow US 98. Clinic will be on the right side after crossing bridge.

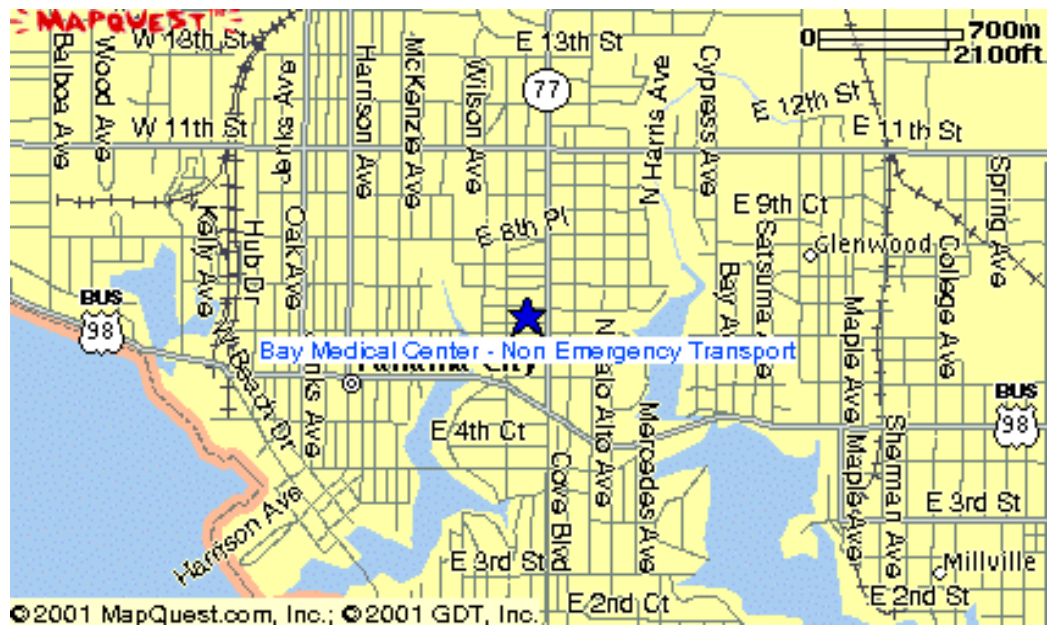
A map indicating the travel route from the site to the Medical Center is inserted as Figure 2-1 of this HASP. This information will also be posted with maps in the field office and copies placed in a conspicuous location within each site vehicle for quick retrieval.

## **2.11 INJURY/ILLNESS REPORTING**

If any TTNUS personnel are injured or develop an illness as a result of working on site, the TTNUS "Injury/Illness Procedure" (Attachment I) must be followed. Following this procedure is necessary for documenting all of the information obtained at the time of the incident.

Any pertinent information regarding allergies to medications or other special conditions will be provided to medical service personnel. This information is listed on Medical Data Sheets (Attachment V) filed onsite. If an exposure to hazardous materials has occurred, provide information on the chemical, physical, and toxicological properties of the subject chemical(s) to medical service personnel.

**FIGURE 2-1**  
**HOSPITAL ROUTE MAP**  
**COASTAL SYSTEMS STATION**  
**PANAMA CITY, FLORIDA**



## FIGURE 2-2

### EMERGENCY RESPONSE PROTOCOL

The purpose of this protocol is to provide guidance for the medical management of injury situations.

In the event of a personnel injury or accident:

- Rescue, when necessary, employing proper equipment and methods.
- Give attention to emergency health problems -- breathing, cardiac function, bleeding, and shock.
- Transfer the victim to the medical facility designated in this HASP by suitable and appropriate conveyance (i.e. ambulance for serious events)
- Obtain as much exposure history as possible (a Potential Exposure report is attached).
- If the injured person is a TTNUS employee, call the medical facility and advise them that the patient(s) is/are being sent and that they can anticipate a call from the WorkCare physician. WorkCare will contact the medical facility and request specific testing which may be appropriate. WorkCare physicians will monitor the care of the victim. Site officers and personnel should not attempt to get this information, as this activity leads to confusion and misunderstanding.
- Call WorkCare at 1-800-455-6155 and enter Extension 109, or follow the voice prompt for after hours and weekend notification, and being prepared to provide:
  - Any known information about the nature of the injury.
  - As much of the exposure history as was feasible to determine in the time allowed.
  - Name and phone number of the medical facility to which the victim(s) has/have been taken.
  - Name(s) of the involved TTNUS employee(s).
  - Name and phone number of an informed site officer who will be responsible for further investigations.
  - Fax appropriate information to WorkCare at (714) 456-2154.
- Contact Corporate Health and Safety Department (Matt Soltis) at 1-800-245-2730.

As data is gathered and the scenario becomes more clearly defined, this information should be forwarded to WorkCare.

WorkCare will compile the results of all data and provide a summary report of the incident. A copy of this report will be placed in each victim's medical file in addition to being distributed to appropriately designated company officials.

Each involved worker will receive a letter describing the incident but deleting any personal or individual comments. A personalized letter describing the individual findings/results will accompany this generalized summary. A copy of the personal letter will be filed in the continuing medical file maintained by WorkCare.

**FIGURE 2-2 (continued)**  
**WORKCARE**  
**POTENTIAL EXPOSURE REPORT**

Name: \_\_\_\_\_ Date of Exposure: \_\_\_\_\_

Social Security No.: \_\_\_\_\_ Age: \_\_\_\_\_ Sex: \_\_\_\_\_

Client Contact: \_\_\_\_\_ Phone No.: \_\_\_\_\_

Company Name: \_\_\_\_\_

**I. Exposing Agent**

Name of Product or Chemicals (if known): \_\_\_\_\_

Characteristics (if the name is not known)

Solid                  Liquid                  Gas                  Fume                  Mist                  Vapor

**II. Dose Determinants**

What was individual doing? \_\_\_\_\_

How long did individual work in area before signs/symptoms developed? \_\_\_\_\_

Was protective gear being used? If yes, what was the PPE? \_\_\_\_\_

Was their skin contact? \_\_\_\_\_

Was the exposing agent inhaled? \_\_\_\_\_

Were other persons exposed? If yes, did they experience symptoms? \_\_\_\_\_

**III. Signs and Symptoms** (check off appropriate symptoms)

**Immediately With Exposure:**

Burning of eyes, nose, or throat

Tearing

Headache

Cough

Shortness of Breath

Chest Tightness / Pressure

Nausea / Vomiting

Dizziness

Weakness

**Delayed Symptoms:**

Weakness

Nausea / Vomiting

Shortness of Breath

Cough

Loss of Appetite

Abdominal Pain

Headache

Numbness / Tingling

**IV. Present Status of Symptoms** (check off appropriate symptoms)

Burning of eyes, nose, or throat

Tearing

Headache

Cough

Shortness of Breath

Chest Tightness / Pressure

Cyanosis

Nausea / Vomiting

Dizziness

Weakness

Loss of Appetite

Abdominal Pain

Numbness / Tingling

Have symptoms: (please check off appropriate response and give duration of symptoms)

Improved: \_\_\_\_\_ Worsened: \_\_\_\_\_ Remained Unchanged: \_\_\_\_\_

**V. Treatment of Symptoms** (check off appropriate response)

None: \_\_\_\_\_ Self-Medicated: \_\_\_\_\_ Physician Treated: \_\_\_\_\_

## **3.0 SITE BACKGROUND**

### **3.1 SITE INFORMATION**

CSS is located in Panama City, Bay County, Florida. Bay County is located on the Gulf of Mexico in Florida's panhandle, approximately 100 miles southwest of Tallahassee. CSS was placed on the United States Environmental Protection Agency's (EPA's) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) National Priorities List (NPL) as a result of pollution resulting from past waste disposal practices that predate CERCLA. CSS was first established in 1942 as a harbor for World War II convoy ships and as a liaison with a nearby shipyard. The United States Department of the Navy has entered into a Federal Facilities Agreement with EPA to define the overall extent of contamination. Additional information concerning the historical background, current site conditions, and other contamination assessments may be found in the accompanying project plan.

### **3.2 SITE HISTORY AND CURRENT OPERATIONS**

CSS is a government-owned and contractor-operated facility. CSS consists of two operational areas, which together comprise approximately 657 acres. The laboratory consists of approximately 360 acres and the ordnance area which covers approximately 300 acres and is primarily for ordnance storage and for limited research. (Note: None of the planned activities involve areas where ordnance concerns exists).

### **3.3 INVESTIGATION AREAS**

#### **3.3.1 AOC2**

AOC2 was defined by the former location of Fuel Oil Tank No. 11, which was a 420,000 gallon aboveground storage tank (AST), and the associated transfer piping. Tank 11 was part of a petroleum storage and distribution facility that included pumphouses and a fuel dispensing station with other storage tanks.

Tank 11 was constructed in 1943 and was originally used to store diesel fuel. Petroleum products were transferred to Tank 11 from the South Dock via a 6 inch underground transfer line connected to a pump house at the South Dock. A smaller 3 inch transfer line connected Tank 11 to a pumphouse located

approximately 100 feet to the northwest of the tank (the current location of Building 543). A circular earthen berm spaced approximately 60 feet from the tank provided secondary containment.

The pumphouse associated with Tank 11 was used to distribute fuel from Tank 11 and tanks associated with the former fuel dispensing facility located approximately 200 feet to the northwest of Tank 11 (the current location of Building 400). Two parallel 3 inch transfer lines distributed diesel fuel and gasoline from the pumphouse to the South Dock. Additional smaller diameter fuel lines may have been used to distribute fuel to other locations in the vicinity of Tank 11.

Approximately 50,000 gallons of diesel fuel were reportedly lost from the tank system in 1953. The exact location of the leak and whether or not the underground piping had failed is unknown. Tank 11 was completely refurbished in 1957, including replacement of 28 bottom plates. The tank was then reportedly used to store gasoline, aviation fuel, diesel fuel, and waste oil. Numerous small leaks, primarily at the tank seams, were reported to have occurred both before and after the tank was refurbished. In the mid 1960s, an estimated 10,000 gallons of oil were released from ruptured fuel transfer lines located between the dock and storage tank. Following the rupture, seepage of diesel oil was observed in Alligator Bayou at the South Dock bulkhead.

Tank 11 and the containment berm were removed in 1979. Reportedly, the bottom plates of the tank had completely deteriorated. The transfer piping from the tank wall to the containment berm was removed. The remaining piping was capped and abandoned in place. Based on utility drawings of the area, the fuel dispensing station and the fuel pumphouse were apparently removed at some time after 1984. Building 400 was built in the area of the former fuel dispensing station. Building 543 has recently been constructed in the area of the former fuel pumphouse.

In July 1997, CSS personnel detected a fuel release into Alligator Bayou. During the investigation of the fuel release, petroleum product was detected entering a storm sewer drain junction box located downgradient of AOC2. The storm sewer drainpipe runs beneath Site 333 and adjacent to Tank 307 before entering an outfall in the sea wall at Alligator Bayou, where the initial fuel release was detected.

TTNUS conducted assessment activities in 1998 to determine the source of the free product observed in the storm sewer and Alligator Bayou. Approximately 29 soil borings, nine monitoring wells and five piezometers were installed and sampled to evaluate the nature and extent of petroleum impacted soil and groundwater in the vicinity of AOC2. Free product was detected in one of the monitoring wells, PCY-AOC2-MW07, which is located approximately 100 feet to the southwest of the former location of Tank 11 and adjacent to the parallel 3 inch transfer lines.

Additional soil and groundwater screening were conducted in 2000 to evaluate the extent of free product in the vicinity of PCY-AOC2-MW07 and to provide a preliminary assessment of the transfer piping, evaluating the need for a pipeline closure assessment. Twenty-four soil borings were advanced in the AOC2/SWMU1 study area to collect soil samples for headspace screening and soil and groundwater samples for analysis by an onsite laboratory. A total of nine monitoring wells were installed during this site investigation. Five of the wells were completed as permanent wells and four of the wells were abandoned. The soil and groundwater screening results from this investigation indicate that petroleum impact has occurred in the area south and southwest of AOC2. The area of petroleum impact to soil and groundwater apparently extends to the north, west, and east of the area previously investigated.

### **3.3.2      Building G-300**

On September 16, 1996, an accidental discharge of diesel fuel was detected near the vent lines of the 150 gallon day tank used to store fuel for an emergency generator in Building 300. The release was identified by an inspector from the FDEP who was at the facility to oversee the removal of the main 2,500-gallon underground storage tank (UST), which supplied diesel fuel to the day tank. The UST was removed and the product line distributing fuel to the day tank was cut, capped and abandoned in place where the line passed beneath existing structures.

An Interim Remedial Action (IRA) was initiated to remove contaminated soil near the vent line for the day tank. The IRA was discontinued after it became apparent that the volume of contaminated soil might have been due to multiple releases from day tank overfills and a contamination assessment was conducted. The contamination assessment identified an area of contaminated subsurface soil adjacent to the southwest corner of Building 300 that extended beneath the footer of the building. This area of soil contamination could not be removed without compromising the structural integrity of the building.

The groundwater quality data collected during the contamination assessment indicated that dissolved hydrocarbon concentrations had met the No Further Action criteria for constituents in the Kerosene Analytical Group. A Monitoring Only Plan (MOP) was recommended for site groundwater due to the soil contamination beneath the building. A Site Assessment Report Addendum was completed for Site G300 that evaluated the potential for natural attenuation of the constituents during the MOP period recommended in the Contamination Assessment Report (CAR). The FDEP approved the MOP for Site G300 and groundwater results indicated that dissolved hydrocarbon concentrations were within the concentration levels predicted by the natural attenuation modeling.

During a scheduled groundwater sampling event in late 1999, free product was detected in PCY-300-MW01 and the MOP was discontinued. The appearance of free product was attributed to the mobilization of residual product from beneath Building G300 following a decrease in water table elevations due to drought conditions.

## 4.0 SCOPE OF WORK

This section describes the project tasks that will be performed at CSS. Additionally, each task has been evaluated and the associated hazards and recommended control measures are listed in Table 5-1 of this HASP. The planned activities involved in this effort are presented in detail in the Corrective Measures Implementation Plan developed for the project. If new tasks are to be performed at the site, Table 5-1 and this section will be modified accordingly. Specific tasks to be conducted include, but are not necessarily limited to, the following:

### At Building G-300:

- Gauging of Free Product and Groundwater Sampling

### At AOC2:

- Mobilization/Demobilization Activities
- Soil Boring using Direct Push Technology (DPT)
- Drilling and Installation of Monitoring Wells
- Groundwater Sampling
- Decontamination of Sampling Equipment
- Land Surveying of Monitoring Well Locations
- Investigative Derived Wastes (IDW)

For additional information on scope of work activities, refer to the associated Plan of Action for CTO 0201 and 0214 or other related documents (Work Plan, Sampling and Analysis Plan (SAP)).

## **5.0 TASKS/HAZARDS/ASSOCIATED CONTROL MEASURES SUMMARIZATION**

Table 5-1 of this section serves as the primary portion of the site specific HASP. This table is intended to assist project personnel in the recognition of hazards and recommended procedures necessary to minimize potential exposure or injuries related to those hazards. The table also assists field team members in determining which PPE and decontamination procedures to use based on appropriate air monitoring techniques and site-specific conditions. The evaluation of each task provided detailed information including anticipated hazards, recommended control measures, air monitoring recommendations, required PPE, and decontamination measures. This table must be updated if the scope of work, contaminants of concern, or pertinent conditions change.

Table 5-1 and the HASP are not meant to be stand alone documents and must be accompanied by the TTNUS Health and Safety Guidance Manual. This manual is designed to further explain supporting elements for any site-specific operations as required by 29 CFR 1910.120. The Guidance Manual should be referenced for additional information regarding air monitoring instrumentation, decontamination activities, emergency response, hazard assessments, hazard communication and hearing conservation programs, medical surveillance, PPE, respiratory protection, site control measures, standard work practices, and training requirements. Many of TTNUS's SOPs are also provided in the Guidance Manual.

SWP issued for all major activities (See Section 10.10) will use elements defined in Table 5-1 as the primary reference. The FOL or the SSO completing the SWP will add additional site-specific information. In situations where the SWP is more conservative than the direction provided in Table 5-1 due to the incorporation of site-specific elements, the SWP will be followed.

### **5.1 GENERAL SAFE WORK PRACTICES**

In addition to the task-specific work practices identified on Table 5-1, the follow these safe work practices when conducting work involving known and unknown site hazards. These safe work practices establish a pattern of general precautions and measures for reducing risks associated with hazardous site operations.

- Refrain from eating, drinking, chewing gum or tobacco, taking medication, or smoking in contaminated or potentially contaminated areas or where the possibility for the transfer of contamination exists.
- Wash hands and face thoroughly upon leaving a contaminated or suspected contaminated area. A thorough shower and washing must be conducted as soon as possible if excessive skin contamination occurs.

- Avoid contact with potentially contaminated substances by walking around puddles, pools, mud, or other such areas. Avoid, whenever possible, kneeling on the ground or leaning or sitting on equipment. Do not place monitoring equipment on potentially contaminated surfaces.
- Be familiar with and adhere to all instructions in the site-specific HASP.
- Be aware of the location of the nearest telephone and all emergency telephone numbers. See Section 2.0, Table 2-1.
- Attend briefings on anticipated hazards, equipment requirements, SWPs, emergency procedures, and communication methods before going on site.
- Plan and mark entrance, exit, and emergency escape routes. See Section 2.0.
- Rehearse unfamiliar operations prior to implementation.
- Maintain visual contact with each other and with other on-site team members by remaining in close proximity in order to assist each other in case of emergency.
- Establish appropriate Safety Zones including Support, Contamination Reduction, and Exclusion Zones.
- Minimize the number of personnel and equipment in contaminated areas (such as the Exclusion Zone). Non-essential vehicles and equipment should remain within the Support Zone.
- Establish appropriate decontamination procedures for leaving the site.
- Immediately report all injuries, illnesses, and unsafe conditions, practices, and equipment to the SSO.
- Matches and lighters are restricted from entering in the Exclusion Zone or Contamination Reduction Zone (CRZ).
- Observe coworkers for signs of toxic exposure and heat or cold stress.
- Inform co-workers of potential symptoms of illness, such as headaches, dizziness, nausea, or blurred vision.

## **5.2 DRILLING/DPT SAFE WORK PRACTICES**

The following Safe Work Practices are to be followed when working in or around HSA/DPT Drill Rig Operations.

### **5.2.1      Before Drilling**

- Identify all underground utilities and buried structures before drilling. Use the Utility Locating and Excavation Clearance SOP provided in Attachment II.
- All drill rigs will be inspected by a Competent Person (the SSO or designee), prior to the acceptance of the equipment at the site and prior to the use of the equipment. All repairs or deficiencies identified will be corrected prior to use. The inspection will be accomplished using the Equipment Inspection Checklist provided in Attachment III. Inspection frequencies will be initially (prior to being put into use at the site), followed by once every 10-day shift or following repairs.
- The work area around the point of operation will be graded to the extent possible to remove any trip hazards near or surrounding rotating equipment.
- The Driller's helper will establish an equipment staging and lay-down plan. The purpose of this is to keep the work area clear of clutter and slips, trips, and fall hazards. Mechanisms to secure heavy objects such as auger flights, and drive rods will be provided to avoid the collapse stacked equipment.
- All potentially contaminated tooling will be wrapped in polyethylene sheeting for storage and transport to the centrally located decontamination unit.

### **5.2.2      During Drilling**

- Secure frayed or loose clothing, hair, and jewelry when working with rotating equipment.
- Personnel will minimize contact to the extent possible with contaminated tooling and environmental media.
- Support functions (sampling and screening stations) will be maintained a minimum distance from the drill rig. This distance is typically the height of the mast plus five feet or a minimum of 25 feet, whichever is greater, to remove personnel involved in these activities from within physical hazard boundaries.
- Only qualified operators and knowledgeable ground crew personnel will participate in the operation of the drill rig.

- In order to minimize contact with potentially contaminated tooling and media and to minimize lifting hazards, multiple personnel should move heavy tooling, as applicable and necessary.
- Only personnel absolutely essential to the work activity will be allowed in the Exclusion Zone. Site visitors will be escorted at all times.

### **5.2.3      After Drilling**

- All equipment used within the Exclusion Zone will undergo a complete decontamination and evaluation by the SSO to determined cleanliness prior to moving to the next location, exiting the site, or prior to down time for maintenance.
- All motorized equipment will be fueled prior to the commencement of the day's activities. During fueling operations all equipment will be shutdown and bonded to the fuel provider, where applicable.
- When not in use all drill rigs will be shutdown, emergency brakes set, and wheels chocked (All vehicles over one ton rated capacity.)
- All areas subjected to subsurface investigative methods will be restored to equal or better condition than original to remove any contamination brought to the surface and to remove any physical hazards. In situations where these hazards cannot be removed, these areas will be barricaded to minimize the impact on field crews working in the area.

TABLE 5-1  
TASKS/HAZARDS/CONTROL MEASURES COMPENDIUM  
NAVY COASTAL SYSTEMS STATION  
PANAMA CITY, FLORIDA

Tasks/Operation/ Locations	Anticipated Hazards	Recommended Control Measures	Hazard Monitoring/Type and Action Levels	Personal Protective Equipment <i>Items in italics are deemed optional as conditions or the FOL or SSO require.</i>	Decontamination Procedures
Mobilization/ Demobilization	<p><b>Chemical hazards:</b></p> <p>Exposure to potential site contaminants is not anticipated during this activity. However, chemicals brought on site in support of field activities are to be identified, logged, accompanied by an appropriate MSDS, properly stored, and evaluated for purposes of hazard communication.</p> <p><b>Physical hazards:</b></p> <p>Potential physical hazards associated with this task may include:</p> <p>1) Lifting (muscle strains and pulls) 2) Pinches and compressions 3) Slip, trips, and falls 4) Moving machinery 5) Vehicular and foot traffic</p> <p><b>Natural Hazards:</b></p> <p>6) Insect, animal bites and stings, poisonous plants, etc.</p>	<p>To eliminate potential chemical hazards associated with this task ensure the following:</p> <ul style="list-style-type: none"><li>- A chemical inventory list is generated for all chemicals brought on site (Complete Section 5.0 of the Health and Safety Guidance Manual).</li><li>- MSDS must be available for all chemicals brought on site.</li><li>- Materials are stored in accordance with recommended practices and according to compatibility (See MSDS for storage and compatibility recommendations).</li></ul> <p>1) Employ machinery or multiple personnel for heavy lifts.</p> <ul style="list-style-type: none"><li>- Use proper lifting techniques.</li></ul> <p>2) Keep any machine guarding in place. Avoid moving parts. Secure loose clothing, jewelry, or long hair that could become entangled.</p> <p>3) Preview and prepare work locations where unstable/uneven terrain exists. Barricade or otherwise identify hazardous areas.</p> <p>4) All equipment to be employed will be</p> <ul style="list-style-type: none"><li>- Inspected in accordance with OSHA and manufacturers design. The inspection will include the completion of the Equipment Record Sheet documenting the review and acceptance/failure of safety devices, guards, emergency stops. The Equipment Inspection Checklist is provided in Attachment III of this HASP.</li><li>- Operated by knowledgeable operators, and knowledgeable ground crew, as applicable.</li><li>- Establish safe zones of approach.</li><li>- Secure all loose articles to avoid possible entanglement.</li></ul> <p>5) Identify all access/egress routes and locations to within established areas of operation.</p> <ul style="list-style-type: none"><li>- All equipment capable of self propelled movement will be equipped with movement alarms as applicable.</li><li>- Traffic regulations for CSS Panama City are to be followed as posted.</li></ul> <p>6) Avoid potential nesting areas of biting/stinging insects and animals. Use commercially available insect repellents. Avoid contact with poisonous vegetation. Wear appropriate clothing. Tape ankle and wrists areas to prevent ticks, chiggers, etc. from attaching themselves to you skin. Wear light colored clothing so that ticks and other biting insects can be easily visible and be removed. Follow directions as specified in Section 6.3 concerning natural hazards.</p>	Not required	<p>Mobilization/demobilization activities are intended to initiate and proceed in Level D protection:</p> <p>Level D - (Minimum Requirements)</p> <ul style="list-style-type: none"><li>- Standard field attire (Sleeved shirt; long pants; or coveralls)</li><li>- Safety shoes or boots with steel toe</li><li>- Safety glasses, when potential eye hazards may exist.</li><li>- Hardhat (when overhead hazards exists, or identified as an operation requirement)</li><li>- Reflective vest for high traffic areas</li><li>- Hearing protection for high noise areas, or as directed on an operation by operation scenario.</li></ul> <p>As a general rule of thumb, if you need to raise your voice to be heard while engaged in conversation with someone who is within 2 feet of your position you may be exposed to excessive noise levels and should employ hearing protection until the SSO can quantify the potential hazard through sound level measurements or noise dosimetry.</p> <p><b>Note:</b> The Safe Work Permit(s) for this task (see Attachment I V) will be issued at the beginning of each day to address the tasks planned for that day. As part of this task, additional PPE may be assigned to reflect site-specific conditions or special considerations or conditions associated with any identified task.</p>	<p>As potential site contaminants are not anticipated to be encountered as part of this task, personal decontamination is not required.</p> <p>All equipment arriving/leaving the site will be inspected prior to permitting this equipment to enter or exit the site. The SSO will inspect the equipment and give the clearance to allow the equipment to pass. Failure to pass inspection will prohibit entering or exiting the site as applicable. All equipment which fails the inspection will have to be decontaminated again to a level acceptable to the SSO prior to passage on or off site. All equipment permitted to pass on/off site will be documented using an Equipment Inspection Checklist. This form may be found in Attachment III of this HASP.</p>
<p>Multi-media sampling including groundwater and soils.</p> <p>This activity also includes collection of water level readings and associated activities in addition to any IDW sampling.</p> <p>Note: Free product may be encountered in monitoring wells at G-300.</p>	<p><b>Chemical Hazards:</b></p> <p>1) Air/particulate/water borne contaminant s assoicated with petroleum product like diesel fuel. Specifically, VOCs, TPHs, and PAHs. Based on information from previous sampling, none of these contaminants of concern are likely to be present at concentrations that pose an inhalation hazard to site workers.</p> <p>See Table 6-1 for a list of specific chemicals of concern.</p> <p>2) Transfer of contamination into clean areas</p> <p><b>Physical hazards:</b></p> <p>3) Noise 4) Lifting (muscle strains and pulls) 5) Pinches and compressions 6) Slip, trips, and falls 7) Insect/animal bites and stings 8) Inclement Weather</p>	<p>1) Employ real-time monitoring instrumentation, action levels, and identified PPE to control exposures to potentially contaminated medias (air and water).</p> <p>2) Decontaminate all equipment and supplies between sampling locations and prior to leaving the site.</p> <p>3) When sampling near the drill/DPT rig, employ hearing protection. The use of hearing protection to protect against excessive noise outside of 25 feet of drilling operations should be incorporated under the following condition: Hearing protection during sample acquisition outside of the boring location sample will be determine on a case-by-case scenario. As a general rule of thumb, if you have to raise your voice to talk to someone who is within 2 feet of your location, noise levels may be excessive, and hearing protection must be worn.</p> <p>4) Use machinery or multiple personnel for heavy lifts. Use proper lifting techniques.</p> <p>5) Use pinch bars or other equipment to keep hands out of the point of operation.</p> <p>6) Preview work locations for unstable/uneven terrain.</p> <p>7) Avoid nesting areas, if necessary employ. Report potential hazards to the SSO. If necessary use insect repellents and/or Tyvek coveralls to minimize contact. See Section 6.3 and Section 4.0 of the Health and Safety Guidance Manual for protection against mosquito and tick hazards.</p> <p>8) All operations will be temporarily suspended during electrical storms.</p>	<p>Direct reading instruments such as a Photoionization Detector (PID) with at least an 10.6 eV source (or higher) or Flame Ionization Detector (FID) will be used as a general screening instrument to detect volatile organic compounds and to evaluate airborne concentrations of potential site contaminants:</p> <p>Source areas (sample locations, borings, etc.) will be monitored using a PID or FID at regular intervals to be determined by the SSO. Positive sustained results at a source or downwind location(s) which may impact operations crew will require the following actions:</p> <p>Monitor the breathing zone of at-risk and downwind employees. Any sustained reading (greater than 1 minute in duration) above 15 ppm in worker breathing zones requires site activities to be suspended and site personnel to report to an unaffected area.</p> <p>Work may resume when airborne readings in worker breathing zone return to background.</p>	<p>All sampling activities are anticipated to proceed in a modified Level D protection as specified below:</p> <p>Level D - (Minimum Requirements) For sampling activities:</p> <ul style="list-style-type: none"><li>- Standard field attire (Sleeved shirt; long pants)</li><li>- Safety shoes or boots (Steel toe)</li><li>- Safety glasses</li><li>- Nitrile gloves (Clean pair for each sample location), layered if necessary</li><li>- <i>Hard-hat (when overhead hazards exists, or identified as an operation requirement)</i></li><li>- <i>Reflective vest for high traffic areas</i></li><li>- <i>Hearing protection for high noise areas, or as directed on an operation by operation scenario.</i></li></ul> <p><b>Note:</b> The Safe Work Permit(s) for this task (see Attachment I V) will be issued at the beginning of each day to address the tasks planned for that day. As part of this task, additional PPE may be assigned to reflect site-specific conditions or special considerations or conditions associated with any identified task.</p>	<p>Decontaminate sample containers in accordance with the Field Sampling Plan.</p> <p><b>Personnel decontamination:</b></p> <ul style="list-style-type: none"><li>- Equipment drop-off</li><li>- Wash and rinse reusable outer protective garments</li><li>- Remove and dispose of disposable PPE</li><li>- Wash hands and face, leave contamination reduction zone.</li></ul> <p><b>Equipment decontamination:</b></p> <p>See Task - Decontamination of Sampling and Heavy Equipment in Table 5-1 of this HASP.</p>

TABLE 5-1  
TASKS/HAZARDS/CONTROL MEASURES COMPENDIUM  
NAVY COASTAL SYSTEMS STATION  
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Tasks/Operation/ Locations	Anticipated Hazards	Recommended Control Measures	Hazard Monitoring/Type and Action Levels	Personal Protective Equipment <i>Items in italics are deemed optional as conditions or the FOL or SSO require.</i>	Decontamination Procedures
Soil borings using Direct Push Technology (DPT) and Installation of Monitoring wells using other drilling methods (HSA).	<p><b>Chemical Hazards:</b></p> <p>1) Air/particulate/water borne contaminant s associated with petroleum product like diesel fuel. Specifically, VOCs, TPHs, and PAHs. Based on information from previous sampling, none of these contaminants of concern are likely to be present at concentrations that pose an inhalation hazard to site workers. See Table 6-1 for the chemicals of concern.</p> <p>2) Transfer of contamination into clean areas or onto persons</p> <p><b>Physical hazards:</b></p> <p>3) Pinch/compression points</p> <p>4) Noise</p> <p>5) Energized systems</p> <p>6) Lifting</p> <p>7) Natural Hazards (Insect/animal bites and stings)</p> <p>8) Inclement weather</p>	<p>1) For VOCs, use real-time monitoring instrumentation, action levels, and identified PPE to control exposures to potentially contaminated media (air, water, soils, etc.). Although unlikely, generation of dusts should be minimized to the greatest extent possible to avoid exposure to particulates or contaminants bound to particulates. If airborne dusts are observed, site personnel will take measures to avoid visible dusts and if necessary will use area wetting methods.</p> <p>2) Decontaminate all equipment and supplies between boreholes and prior to leaving the site.</p> <p>3) All equipment to be used will be</p> <ul style="list-style-type: none"><li>- Inspected in accordance with Federal safety and transportation guidelines, OSHA (1926.600,.601,.602), and manufacturers design and documented as such using the Equipment Inspection Sheet (See Attachment III of this HASP or Section 10.0 of the TtNUS Health and Safety Guidance Manual).</li><li>- Operated by qualified operators, and knowledgeable ground crew.</li><li>- Used within establish safe zones and routes of approach</li><li>- Only manufacturer approved equipment may be used in conjunction with equipment repair procedures (i.e. auger pins, etc.).</li></ul> <p>In addition, to equipment considerations the following safe operating procedures will be incorporated:</p> <ul style="list-style-type: none"><li>- All personnel not directly supporting this operation will remain at least 25 feet from the point of operation.</li><li>- Hydraulic masts or other projecting devices shall be at least 20 feet from overhead power sources and a minimum of 3 feet from underground utilities unless the exact location of the underground utility is known.</li><li>- Hand signals will be established prior to the commencement of the operation.</li><li>- Only manufacturer approved equipment may be used in conjunction with equipment repair procedures (i.e., flight connectors etc.).</li><li>- Work areas will be kept clear of clutter.</li><li>- Secure all loose articles to avoid possible entanglement.</li><li>- All equipment shall be equipped with movement warning systems.</li><li>- All personnel working in high equipment traffic areas are required to wear reflective vests for high visibility, and to establish unimpeded work areas around the operation. This activity may require areas of the building to be coordinated off during this operation.</li><li>- All personnel will be instructed in the location and operations of the emergency shut off device(s). This device will be tested initially (and then periodically) to insure its operational status.</li><li>- Areas will be inspected prior to the movement of drill rig/DPT vehicle and support vehicles to eliminate any physical hazards. This will be the responsibility of the FOL and/or SSO.</li></ul> <p>4) Hearing protection will be used during all subsurface activities.</p> <p>5) All utility clearances shall be obtained prior to subsurface activities. Prior to any subsurface investigations, the locations of all underground utilities will be identified and marked. Obtain written permit clearance prior to all subsurface investigations. See Attachment II Utility Locating And Excavation Clearance of this HASP.</p> <p>6) Use machinery or multiple personnel for heavy lifts. Use proper lifting techniques.</p> <p>7) Avoid nesting areas, use commercially available repellents. Report potential hazards to the SSO.</p> <p>8) Suspend or terminate operations until directed otherwise by SSO</p>	<p>Direct reading instruments such as a Photoionization Detector (PID) with at least an 10.6 eV source (or higher) or Flame Ionization Detector (FID) will be used as a general screening instrument to detect volatile organic compounds and to evaluate airborne concentrations of potential site contaminants:</p> <p>Source areas (sample locations, borings, etc.) will be monitored using a PID or FID at regular intervals to be determined by the SSO. Positive sustained results at a source or downwind location(s) which may impact operations crew will require the following actions:</p> <p>Monitor the breathing zone of at-risk and downwind employees. Any sustained reading (greater than 1 minute in duration) above 15 ppm in worker breathing zones requires site activities to be suspended and site personnel to report to an unaffected area.</p> <p>Work may resume when airborne readings in worker breathing zone return to background.</p> <p>Where the utility clearance cannot be obtained in a reasonable period, or not located, intrusive activities shall proceed with extreme caution using a magnetometer for periodic downhole surveys every 2 feet to a depth of at least 6 feet. See Attachment V Utility Locating And Excavation Clearance of this HASP.</p>	<p>All subsurface operations are to be initiated in Level D protection. Level D protection constitutes the following minimum protection</p> <ul style="list-style-type: none"><li>- Standard field attire (Sleeved shirt; long pants)</li><li>- Tyvek coveralls and disposable boot covers if surface contamination is present or if the potential exists for soiling work attire.</li><li>- Nitrile gloves with surgical style inner gloves</li><li>- Steel toe safety shoes</li><li>- Safety glasses</li><li>- Hardhat</li><li>- Hearing protection for high noise areas, as directed by the SSO.</li><li>- <i>Reflective vest for high traffic areas</i></li></ul> <p><b>Note:</b> The Safe Work Permit(s) for this task (see Attachment IV) will be issued at the beginning of each day to address the tasks planned for that day. As part of this task, additional PPE may be assigned to reflect site-specific conditions or special considerations or conditions associated with any identified task.</p>	<p><b>Personnel Decontamination</b> will consist of a soap/water wash and rinse for outer protective equipment (boots, gloves, PVC splash suits, etc.). This function will take place at an area adjacent to the site activities. This procedure will consist of:</p> <ul style="list-style-type: none"><li>- Equipment drop</li><li>- Soap/water wash and rinse of outer boots and gloves</li><li>- Soap/water wash and rinse of the outer splash suit, as applicable</li><li>- Outer suit, boot covers, outer glove removal</li><li>- Wash hands and face, leave contamination reduction zone</li><li>- Shower at the end of each shift or after exposure to contaminants.</li></ul> <p><b>Equipment Decontamination</b> - All heavy equipment decontamination will take place at a centralized decontamination pad utilizing steam or pressure washers. Heavy equipment such as Drill/DPT Rig, will have the wheels and tires cleaned along with any loose debris removed, prior to transporting to the central decontamination area. All site vehicles will be restricted access to exclusion zones, or also have their wheels/tires sprayed off as not to track mud onto the roadways servicing this installation. Roadways shall be cleared of any debris resulting from the onsite activity.</p> <p>All equipment used in the exclusion zone will require a complete decontamination between locations and prior to removal from the site. The FOL or the SSO will be responsible for evaluating equipment arriving onsite and that which is to leave the site. No equipment will be authorized access or exit without this authorization.</p> <p>Evaluation will consist of</p> <ul style="list-style-type: none"><li>- Visual inspection</li><li>- Scanning equipment with monitoring instruments</li></ul>

TABLE 5-1  
TASKS/HAZARDS/CONTROL MEASURES COMPENDIUM  
NAVY COASTAL SYSTEMS STATION  
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Tasks/Operation/ Locations	Anticipated Hazards	Recommended Control Measures	Hazard Monitoring/Type and Action Levels	Personal Protective Equipment <i>Items in italics are deemed optional as conditions or the FOL or SSO require.</i>	Decontamination Procedures
Decontamination of sampling equipment	<p><b>Chemical hazards:</b></p> <p>1) Air/particulate/water borne contaminant s assoicated with petroleum product like diesel fuel. Specifically, VOCs, TPHs, and PAHs. Based on information from previous sampling, none of these contaminants of concern are likely to be present at concentrations that pose an inhalation hazard to site workers. See Table 6-1 for the chemicals of concern.</p> <p>- Decontamination fluids - Liquinox (detergent), isopropanol, methanol, etc.</p> <p><b>Physical hazards:</b></p> <p>2) Lifting (muscle strains and pulls)</p> <p>3) Pinches and compressions</p> <p>4) Noise</p> <p>5) Flying Projectiles</p>	<p>1) Employ protective equipment to minimize contact with site contaminants and hazardous decontamination fluids.</p> <p>- Have a means by which the eyes and/or skin may be flushed (i.e., portable camp shower, emergency eyewash, etc.) readily accessible.</p> <p>- Obtain manufacturer's MSDS for any decontamination solvents used on-site. Users of solvents must review the MSDS and have ready access to it on-site. Maintain a Chemical Inventory and a file of MSDSs for all hazardous chemicals brought to the site. Users must observe MSDS requirements with regard to chemical use, storage, spill response, PPE, and other aspects.</p> <p>Use of solvents will be restricted to outdoor locations (i.e., this activity is restricted from inside a trailer or other small or poorly-ventilated space).</p> <p>2) Use multiple persons where necessary for lifting and handling heavy pieces of equipment for decontamination purposes.</p> <p>3) Place or stack equipment securely during decontamination and air drying to prevent unstable items from falling.</p> <p>4) Steam/pressure washer operators will wear hearing protection. Other personnel will be restricted from the area (i.e., no closer than 20 feet) to minimize their potentials to exposure to noise, overspray, and flying projectiles.</p> <p>5) Wear appropriate protection (splash shield to protect pressure washer operator). Place shields around the area when this potential exists to protect others within the area.</p>	<p>1) Use visual observation and real-time monitoring instrumentation to ensure all equipment and/or areas which have been cleaned and dried are properly cleaned of potentially contaminated medias (e.g., air, water, soils).</p> <p><b>Elevated airborne concentrations impacting field crews or downwind receptors are not anticipated for this task.</b></p>	<p><b>For sampling equipment including trowels, macro samplers, bailers, etc.:</b></p> <p>Observe MSDS requirements, but not less than Level D Minimum requirements -</p> <ul style="list-style-type: none"><li>- Standard field attire (sleeved shirt; long pants)</li><li>- Safety shoes or boots(Steel toe)</li><li>- Nitrile outer gloves</li><li>- Safety glasses</li></ul> <p>In the event of overspray of chemical decontamination fluids employ PVC rain suits or PE or PVC coated Tyvek as necessary.</p> <p>Respiratory protection is not anticipated for these activities.</p> <p><b>Note:</b> The Safe Work Permit(s) for this task (see Attachment I V) will be issued at the beginning of each day to address the tasks planned for that day. As part of this task, additional PPE may be assigned to reflect site-specific conditions or special considerations or conditions associated with any identified task.</p>	<p>This decontamination procedure for <b>Level D</b> protection will consist of</p> <ul style="list-style-type: none"><li>- Remove and dispose of any disposable PPE (Tyvek coveralls, outer gloves, etc.)</li><li>- Soap/water wash and rinse of reusable PPE items (e.g., splash suit, boots).</li><li>- Wash hands and face; leave contamination reduction zone</li></ul> <p><b>Equipment Decontamination</b> - All equipment used in the exclusion zone will require a complete decontamination between locations and prior to removal from the site.</p> <p>The FOL or the SSO will be responsible for evaluating equipment arriving at and leaving the site. No equipment will be authorized access or exit without this authorization.</p> <p>Evaluation will consist of</p> <ul style="list-style-type: none"><li>- Visual inspection</li><li>- Scanning equipment with monitoring instruments</li></ul>
IDW management and moving IDW drums to storage areas	<p><b>Chemical hazards:</b></p> <p>1) Air/particulate/water borne contaminant s assoicated with petroleum product like diesel fuel. Specifically, VOCs, TPHs, and PAHs. Based on information from previous sampling, none of these contaminants of concern are likely to be present at concentrations that pose an inhalation hazard to site workers. See Table 6-1 for the chemicals of concern.</p> <p>2) Transfer of contamination into clean areas</p> <p><b>Physical hazards:</b></p> <p>3) Noise in excess of 85 dBA</p> <p>4) Lifting (strain/muscle pulls)</p> <p>5) Pinches and compressions</p> <p>6) Slip, trips, and falls</p> <p>7) Vehicular and foot traffic</p> <p>8) Ambient temperature extremes (heat stress)</p> <p><b>Natural hazards:</b></p> <p>9) Insect/animal bites and stings, poisonous plants, etc.</p>	<p>1) Employ real-time monitoring instrumentation, action levels, and identify PPE to control exposures to potentially contaminated media (e.g. air, water, soils).</p> <p>2) Decontaminate all equipment and supplies, if they become contaminated, between locations and prior to leaving the site.</p> <p>3) When working near heavy equipment, use hearing protection.</p> <p>4) Use machinery or multiple personnel for heavy lifts. Use proper lifting techniques.</p> <p>5) Keep any machine guarding in place. Avoid moving parts. Use tools or equipment where necessary to avoid contacting pinch points.</p> <p>6) Preview work locations for unstable/uneven terrain.</p> <p>7) Traffic and equipment considerations are to include the following:</p> <ul style="list-style-type: none"><li>- Establish safe zones of approach (i.e. Boom + 3 feet).</li><li>- All drill rig and other self-propelled equipment shall be equipped with movement warning systems.</li><li>- All activities are to be conducted consistent with the Base requirements.</li></ul> <p>8) Wear appropriate clothing for weather conditions. Provide acceptable shelter and liquids for field crews.</p> <p>9) Avoid nesting areas, use repellents. Report potential hazards to the SSO. Follow guidance presented in Section 4 of the Health and Safety Guidance Manual.</p>	<p><b>It is not anticipated that potential contaminant concentrations at IDW management locations will present an inhalation hazard.</b></p> <p>A direct reading Photoionization Detector (PID), with at least a 10.6 eV lamp, will be used to screen IDW containers and to detect the presence of any potential volatile organics. Positive sustained results at a source or downwind location(s) which may impact operations crew will require the following actions:</p> <ul style="list-style-type: none"><li>- Monitor the breathing zone of at-risk and downwind employees. Any sustained readings (greater than 1 minute in duration) above 15 ppm in the breathing zone of the at-risk employees requires site activities to be suspended and site personnel to report to an unaffected area.</li></ul>	<p>Level D protection will be utilized for the initiation of all sampling activities.</p> <p>Level D - (Minimum Requirements)</p> <ul style="list-style-type: none"><li>- Standard field attire (Sleeved shirt; long pants)</li><li>- Nitrile or cotton/leather work gloves with surgical style inner gloves</li><li>- Safety shoes (steel toe/shank)</li><li>- Safety glasses</li><li>- <i>Hardhat (when overhead hazards exists, or identified as a operation requirement)</i></li><li>- <i>Reflective vest for high traffic areas</i></li><li>- <i>Tyvek coveralls and disposable boot covers if surface contamination is present or if the potential for soiling work attire exists.</i></li><li>- <i>Hearing protection for high noise areas, or as directed on an operation by operation scenario.</i></li></ul>	<p><b>Personnel Decontamination</b> will consist of a soap/water wash and rinse for reusable outer protective equipment (boots, gloves, PVC splash suits, as applicable). The decon function will take place at an area adjacent to the site activities. This procedure will consist of:</p> <ul style="list-style-type: none"><li>- Equipment drop</li><li>- Soap/water wash and rinse of outer boots and gloves, as applicable</li><li>- Soap/water wash and rinse of the outer splash suit, as applicable</li><li>- Disposable PPE will be removed and bagged.</li></ul>

TABLE 5-1  
TASKS/HAZARDS/CONTROL MEASURES COMPENDIUM  
NAVY COASTAL SYSTEMS STATION  
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Tasks/Operation/ Locations	Anticipated Hazards	Recommended Control Measures	Hazard Monitoring/Type and Action Levels	Personal Protective Equipment	Decontamination Procedures
Land Surveying Activities	<p><b><i>Chemical hazards:</i></b></p> <p>Exposure to potential site contaminants during surveying activities is unlikely given the nature of surveying work and the limited contact with potentially contaminated media (soil and groundwater). To further reduce the potential for exposure, site personnel performing surveying activities will minimize contact with potentially contaminated media and will avoid areas where chemical hazards may exist.</p> <p>Refer to Section 6.0 for a list of potential and representative site contaminants.</p> <p><b><i>Physical hazards:</i></b></p> <p>1) Slip, trips, and falls.</p> <p>2) Natural hazards (Insect/animal bites and stings, poisonous plants).</p> <p>3) Inclement weather.</p>	<p>1) Preview work locations and site lines for uneven and unstable terrain. Clear necessary vegetation and establish temporary means for traversing hazardous terrain (e.g. rope ladders).</p> <p>2) Avoid potential nesting areas of biting/stinging insects and animals. Use commercially available insect repellents. Avoid contact with poisonous vegetation. Wear appropriate clothing. Tape ankle and wrists areas to prevent ticks, chiggers, etc. from attaching themselves to skin. Wear light-colored clothing so that ticks and other biting insects can be easily visible and be removed. If working in areas where snakes are a threat, wear snake chaps to protect against bites. Follow directions as specified in Section 6.3 concerning natural hazards.</p> <p>3) All operations will be temporarily suspended during electrical storms.</p>	No air monitoring is needed given that the potential for exposure to site contaminants during this activity is considered minimal.	<p>Surveying activities will be performed in Level D protection.</p> <p>Level D Protection consists of the following:</p> <ul style="list-style-type: none"><li>- Standard field dress including sleeved shirt and long pants.</li><li>- Steel toe safety shoes.</li><li>- <i>Safety glasses, hard hats (if working near machinery).</i></li><li>- <i>Tyvek coveralls may be worn to provide additional protection against poisonous plants and insects, particularly ticks.</i></li><li>- <i>Work gloves may be worn if desired.</i></li><li>- <i>Snake chaps for heavily wooded area where encounters are likely.</i></li></ul> <p><b>Note:</b> The Safe Work Permit(s) for this task (Appendix IV) will be issued at the beginning of each day to address the tasks planned for that day. As part of this task, additional PPE may be assigned to reflect site-specific conditions, special considerations, or conditions associated with any identified task.</p>	<p><b>Personnel Decontamination</b> - A structured decontamination is not required, as the likelihood of encountering contaminated media is considered remote. However, survey parties should inspect themselves and one another for the presence of ticks when exiting wooded areas, grassy fields, etc. Any ticks found should be promptly removed. See the Health and Safety Guidance Manual for more information.</p>

## 6.0 HAZARD ASSESSMENT

The following section provides information regarding the chemical and physical hazards present at CSS and the activities conducted as part of this scope of work. Table 6-1 provides information related to chemical constituents that have been identified by analysis or are suspected to be present at the site based on historical data. Specifically, toxicological information, exposure limits, symptoms of exposure, physical properties, and air monitoring and sampling data are discussed in the table.

### 6.1 CHEMICAL HAZARDS

The potential health hazards associated with the site investigation areas include inhalation, ingestion, and dermal contact of various contaminants which may be present in shallow and deep soils as well as groundwater. Based on prior activities at the sites, there are several contaminants that are known to be present in elevated levels and other constituents which may be encountered. The following have been identified as the primary classes of hazards at the sites to be investigated:

#### G-300:

Volatile Organic Compounds (VOCs) such as benzene, toluene, ethylbenzene, xylenes; and Total Petroleum Hydrocarbons (TPH) related to diesel fuel.

#### AOC2:

VOCs such as ethylbenzene and xylenes; TPH/Polynuclear Aromatic Hydrocarbons (PAHs) such as fluorene, naphthalene, and mehtylnaphthalenes; and Lead, related to petroleum products.

Table 6-1 provides information on the individual substances likely to be present at the sites of concern. Included is information on the toxicological, chemical, and physical properties of these substances. It is not anticipated that exposure to site contaminants will occur during sampling activities. Contaminants may be present as volatiles or bound to particulates. Exposure to contaminants bound to particulates is most likely to occur through ingestion of contaminated soil or water, or hand-to-mouth contact during soil disturbance activities. For this reason, PPE and basic hygiene practices (washing face and hands before leaving site) will be extremely important. Inhalation exposure is not anticipated due to select sampling methods.

## **6.2 PHYSICAL HAZARDS**

The following is a list of physical hazards that may be encountered at the site or may present during the performance of site activities associated with the scope of work.

- Slip, trip, and fall hazards
- Strain/muscle pulls from manual lifting
- Noise in excess of 85 Decibel A-weighted Scale (dBA)
- Exposure to pinch or compression points
- Entanglement or contact with moving or rotating equipment/machinery
- Contact with energized sources (aboveground and underground)
- Heat stress
- Inclement weather

These physical hazards are discussed in Table 5-1 as applicable to each site task. Further, many of these hazards are discussed in detail in Section 4.0 of the Health and Safety Guidance Manual. Specific discussions on some of these hazards are presented below.

### **6.2.1 Heat Stress**

Given the geographic location of the site and the project schedule, overexposure to high ambient temperatures (heat stress) may exist during performance of this work depending on the project schedule. (extremely cold temperatures are not expected to be encountered due to project location). Work performed when ambient temperatures exceed 70° F may result in varying levels of heat stress (heat rash, heat cramps, heat exhaustion, and/or heat stroke) depending on variables such as wind speed, humidity, and percent sunshine, as well as physiological factors such as metabolic rate and skin moisture content. Additionally, workload and level of protective equipment will affect the degree of exposure. Site personnel will be encouraged to drink plenty of fluids to replace those lost through perspiration. Additional

information such as Work-Rest Regimens and personnel monitoring may be found in Section 4.0 of the Health & Safety Guidance Manual.

### **6.3 NATURAL HAZARDS**

During field activities site personnel may also encounter various natural hazards including:

- Insect bites and stings
- Vector (Ticks, mosquitoes, etc.) transmitted illnesses and diseases
- Snakes and other wild animal encounters
- Poisonous Plants

#### **6.3.1 Insect Bites and Stings**

Insect bites and stings are difficult to control given the climate and environmental setting of the base. However, in an effort to minimize this hazard the following control measures will be initiated where possible.

- Loose fitting clothing with long sleeves, where possible (given heat stress considerations) should be employed to provide a barrier between the field person and the insects. Commercially available bug sprays and repellents can be used if necessary. Products such as N, N-diethyl-meta toluamide (DEET) should not be applied directly to the skin due to potential irritation. This product should be applied over clothing articles. For mosquito infested areas mosquito nets may also be used.
- The FOL and/or the SSO will preview all access routes and work areas in an effort to identify physical hazards including nesting areas in and around the work sites. These areas will be communicated to all site personnel.

Various insects and animals may be present and should be considered. For example, fire ants present a unique situation when working outdoors in Florida. Their aggressive behavior and their ability to sting repeatedly can pose a unique health threat. The sting injects venom (formic acid) that causes an extreme burning sensation. Pustules form which can become infected if scratched. Allergic reactions of people sensitive to the venom include dizziness, swelling, shock and in extreme cases unconsciousness and death. People exhibiting such symptoms should see a physician. Fire ants can be identified by their habitat. They build mounds in open sunny areas sometimes supported by a wall or shrub. The mound

has no external opening. The size of the mound can range from a few inches across to some which are in excess of two feet or more in height and diameter. When disturbed they defend it by swarming out and over the mound, even running up grass blades and sticks.

**Note:** It is important that any allergies be reported on the Medical Data Sheets and to the SSO. Additionally, any specific procedure for administering treatment as directed by your physician, must also be communicated to ensure the quickest and most efficient response possible.

### **6.3.2      Vector (Ticks, Mosquitoes, etc.) Transmitted Illnesses and Diseases**

Ticks and mosquitoes, in this case, are the primary vectors of concern. These insects have been identified in the transmission of various diseases, including Lyme disease and malaria. Warm months (spring through early fall) are the predominant time for this hazard to impact personnel. However, due to the climate and environmental setting, this hazard may occur year-round.

There are various areas throughout the U.S. where Lyme Disease is endemic. Fortunately, Florida is not one of these areas. Nonetheless, personnel should be aware of the hazards of tick bites and Lyme Disease. The longer a disease carrying tick remains attached to the body, the greater the potential for contracting the disease. Wearing long sleeved shirts and long pants (tucked into boots). As well as performing frequent body checks will prevent long term attachment. Site first aid kits should be equipped with medical forceps and rubbing alcohol to assist in tick removal. For information regarding tick removal procedures, and symptoms of exposure consult Section 4.0 of the Health and Safety Guidance Manual.

### **6.3.3      Snakes and Other Wild Animals**

Indigenous animals, including snakes (poisonous and non-poisonous), raccoons, and other animals native to the region may be encountered as part of field operations. Some of the work locations may encroach on nesting areas or territories claimed by these animals.

To avoid the obvious hazards conveyed as part of a direct encounter, the following actions will be taken to minimize impact on field crews and/or site operations.

- The FOL and/or SSO will preview access routes and work locations for nesting areas or signs of animal activities (tracks, foraging areas, etc.). All identified suspect areas will be communicated to the field crews. Where avoidance of these areas, or the animals that inhabit them, is not possible, the relocation of animals and nests will be coordinated with the Maryland Fish and Wildlife Commission.

## **Snake Bites**

All initial efforts will be directed to avoid, where possible, nesting and territorial areas claimed by these reptiles. However, should field personnel receive a bite, the following actions are necessary.

- Obtain a detailed description of the snake. This and the bite mark will enable medical personnel administering aid to provide prompt and correct antidotes as necessary.
- Immobilize the bite victim to the greatest extent possible. Physical exertion will mobilize the toxins (in poisonous varieties) from the bite point systemically through the body.
- Apply a pressure wrap (for extremities), just above and over the bite area. With a couple wraps of the pressure wrap in place over the bite area, apply a splint, and continue the application of the pressure wrap. The purpose for the splint is to restrict the movement of the extremity; this along with the pressure wrap will aid in restricting the toxins from leaving the site of the bite.
- Seek medical attention immediately.

### **6.3.4 Poisonous Plants**

Various plants that can cause an allergic reaction may be encountered during field work. These include, but are not limited to, poison ivy, poison oak, and poison sumac. Contact may occur when clearing vegetation to gain access to work areas.

Protective measures to control and minimize the effects of poisonous plants include the following:

- Identify plants for field personnel.
  - Poison Ivy plants are characterized climbing shrubbery, three-leaf configuration ovate to elliptical in shape, greenish flowers, and white berries that produce irritating oils.
  - Poison Sumac plants characterized as a tall bush of the sumac family bearing compound leaves (7-13 entire leaflets) branched from a central axis, drooping, with axially clusters of white fruit producing irritating oils.
  - Poison oak plants are characterized as similar to poison ivy consisting of a shrub, stems erect, 0.3 to 2.0 meters tall, leaflets consist of broad thick lobes coarsely serrated configuration, denser at the base, less so than the top.

- Use of disposable garments such as Tyvek when clearing brush. After use remove and properly dispose of disposable PPE, do not reuse.
- Practice personal hygiene. The oils from the plants will only cause an allergic response when the person's protective skin layer is penetrated. This can be accomplished through pores open when perspiring, or through cuts, nicks, scratches, etc. This can also be accomplished when using excessively hot water for cleaning the skin, which also causes pores to open. Prior to break time wash potentially exposed skin with cool water and soap to remove as much of the oils as possible. In heavily vegetated areas of these plants, additional measures including barrier creams and blocks may be used to prevent the oils from accessing and penetrating the dermal layer.

**TABLE 6-1**  
**CHEMICAL, PHYSICAL, AND TOXICOLOGICAL DATA**  
**COASTAL SYSTEMS STATION, PANAMA CITY, FLORIDA – CTO 0201/0214**

Substance	CAS No.	Air Monitoring/Sampling Information		Exposure Limits	Warning Property Rating	Physical Properties	Health Hazard Information
Diesel Fuel No.2-D	Mixture	Components of this substance will be detected readily; however, no documentation exists as to the relative response ratio of either PID or FID.	Air sampling use charcoal tube as a collection media; carbon disulfide desorption; GC/FID detection. Sampling and analytical protocol in accordance with NIOSH Method #1550.	OSHA; NIOSH; ACGIH: 5 mg/m <sup>3</sup> as mineral oil mist. In addition NIOSH and ACGIH establish 10 mg/m <sup>3</sup> as a STEL.	Kerosene odor  <b>Recommended air-purifying cartridges:</b> Organic vapor  <b>Recommended gloves:</b> Nitrile	<b>Boiling Pt:</b> <300-550°F; 149-288°C <b>Melting Pt:</b> Not available <b>Solubility:</b> Negligible <b>Flash Pt:</b> 95-145°F; 35-62°C <b>Autoignition:</b> 475°F, 246°C <b>LEL/LFL:</b> 0.6% <b>UEL/UFL:</b> 8.0% <b>Vapor Density:</b> >5 <b>Vapor Pressure:</b> <0.1 mmHg @ 70°F; 21°C <b>Specific Gravity:</b> 0.80 <b>Incompatibilities:</b> strong oxidizers, halogens, and hypochlorites <b>Appearance and odor:</b> Colorless to amber with a kerosene odor	Prolonged or repeated exposures to this product may cause skin and eye irritation. Because of the defatting capabilities, this exposure may lead to a dermatitis condition. High vapor concentrations are irritating to the eyes and respiratory tract. Exposure to high airborne concentrations may result in narcotic effects, including dizziness, headaches, and anesthetic capabilities leading to unconsciousness. High concentrations in a confined space may adequately displace oxygen thereby resulting in suffocation.
Benzene	71-43-2	PID: I.P 9.24 eV, 100% response with PID and 10.2 eV lamp.  FID: 150% relative response ratio with FID.	Air sample using charcoal tube; carbon disulfide desorption; Sampling and analytical protocol in accordance with OSHA 07 or NIOSH Method #1500.	OSHA: 1 ppm ACGIH: 10 ppm NIOSH: 0.1 ppm IDLH: 500 ppm	Inadequate - Odor threshold 34-199 ppm. OSHA accepts the use of air-purifying respirators with organic vapor cartridge up to 10 ppm despite the inadequate warning properties providing cartridges are changed at the beginning of each shift.  <b>Recommended gloves:</b> Butyl/neoprene blend - >8.00 hrs; Silver shield as a liner - >8.00 hrs; Viton - >8.00 hrs	<b>Boiling Pt:</b> 176°F; 80°C <b>Melting Pt:</b> 42°F; 5.5°C <b>Solubility:</b> 0.07% <b>Flash Pt:</b> 12°F; -11°C <b>LEL/LFL:</b> 1.3% <b>UEL/UFL:</b> 7.9% <b>Vapor Density:</b> 2.77 <b>Vapor Pressure:</b> 75 mmHg <b>Specific Gravity:</b> 0.88 <b>Incompatibilities:</b> Strong oxidizers, fluorides, perchlorates, and acids <b>Appearance and Odor:</b> Colorless to a light yellow liquid with an aromatic odor	Overexposure may result in irritation to the eyes, nose, throat, and respiratory system. CNS effects include giddiness, lightheadedness, headaches, staggered gait, fatigue, and lassitude and depression. Additional effects may include nausea. Long duration exposures may result in respiratory collapse. Regulated as an OSHA carcinogen. May cause damage to the blood forming organs and may cause a form of cancer called leukemia.
Ethylbenzene	100-41-4	PID: I.P 8.76, High response with PID and 10.2 eV lamp.  FID: 100% response with FID.	Air sample using charcoal tube; carbon disulfide desorption; GC/FID detection. Sampling and analytical protocol in accordance with OSHA Method #07 or NIOSH Method #1501 Aromatic Hydrocarbon.	ACGIH & NIOSH: 100 ppm; 125 ppm STEL  OSHA: 100 ppm  IDLH: 800 ppm	Adequate - Can use air-purifying respirator with organic vapor cartridge up to 1,000 ppm.  <b>Recommended gloves:</b> Neoprene or nitrile w/ silver shield when potential for saturation; Teflon >3.00 hrs	<b>Boiling Pt:</b> 277°F; 136°C <b>Melting Pt:</b> -139°F; -95°C <b>Solubility:</b> 0.01% <b>Flash Pt:</b> 55°F; 13°C <b>LEL/LFL:</b> 1.0% <b>UEL/UFL:</b> 6.7% <b>Vapor Density:</b> 3.66 <b>Vapor Pressure:</b> 10 mmHg @ 79°F; 26°C <b>Specific Gravity:</b> 0.87 <b>Incompatibilities:</b> Strong oxidizers <b>Appearance and odor:</b> Colorless liquid with an aromatic odor. Odor Threshold of 0.092-0.60.	Regulated primarily because of its potential to irritate the eyes and respiratory system. In addition, effects of overexposure may include headaches, narcotic effects, CNS changes (i.e., coordination impairment, impaired reflexes, tremoring) difficulty in breathing, possible chemical pneumonia, and potentially respiratory failure or coma.

**TABLE 6-1**  
**CHEMICAL, PHYSICAL, AND TOXICOLOGICAL DATA**  
**COASTAL SYSTEMS STATION, PANAMA CITY, FLORIDA – CTO 0201/0214**

Substance	CAS No.	Air Monitoring/Sampling Information		Exposure Limits	Warning Property Rating	Physical Properties	Health Hazard Information
Toluene	108-88-3	PID: I.P. 8.82 eV, High response with PID and 10.2 eV lamp.  FID: 110% response with FID.	Air sample using charcoal tube; carbon disulfide desorption. Sampling and analytical protocol shall proceed in accordance with OSHA Method #07, or NIOSH Method #1500.	OSHA: 200 ppm 300 ppm (Ceiling)  ACGIH: 50 ppm (skin)  NIOSH: 100 ppm 150 ppm STEL  IDLH: 500 ppm	Adequate - Odor threshold 1.6 ppm is considered good. Can use air-purifying respirator with organic vapor cartridge up to 1,000 ppm.  <b>Recommended gloves:</b> Teflon >15.00 hrs; Viton >16.00 hrs; silver shield >6.00 hrs; supported nitrile (Useable time limit 0.5 hr, complete submersion for the nitrile selection); PV alcohol >25.00 hrs	<b>Boiling Pt:</b> 232°F; 111°C <b>Melting Pt:</b> -139°F; -95°C <b>Solubility:</b> 0.05% (61°F;16°C) <b>Flash Pt:</b> 40°F; 4°C <b>LEL/LFL:</b> 1.2% <b>UEL/UFL:</b> 7.1% <b>Vapor Density:</b> 3.14 <b>Vapor Pressure:</b> 20 mmHg @ 65°F; 18° C <b>Specific Gravity:</b> 0.87 <b>Incompatibilities:</b> Strong oxidizers <b>Appearance and odor:</b> Colorless liquid with a sweet pungent aromatic odor.	Overexposure to this substance may result in mild to moderate irritation at all points of contact, and CNS changes including euphoria, confusion, nervousness, and possibly paresthesia characterized by an abnormal burning sensation, pricking, or numbness.  At 200-500 ppm exposure has resulted in headaches, nausea, eye irritation, loss of appetite, bad taste, impair coordination, fatigue, and weariness. Chronically, toluene overexposure may result in dermatitis, liver, and kidney damage.
Xylene All isomers o-,m-, p-	1330-20-7	PID: I.P. 8.56 eV, High response with PID and 10.2 eV lamp.  FID: 110% response with FID.	Air sample using charcoal tube; carbon disulfide desorption; GC/FID detection. Sampling and analytical protocol shall proceed in accordance with OSHA 07, or NIOSH Method 1500.	ACGIH, & NIOSH: 100 ppm, 150 ppm STEL  OSHA: 100 ppm  IDLH: 900 ppm	Adequate - Odor thresholds for the following isomers: 0.6 m-; 5.4 p-; 20 o- ppm. Can use air-purifying respirator with organic vapor cartridge up to 1,000 ppm concentrations.  <b>Recommended gloves:</b> PV Alcohol >12.67 hrs; Viton >8.00 hrs; CPE >1.00 hr; Butyl 0.87 hrs; Nitrile is acceptable for limited operations and contact (>0.20 hrs)	<b>Boiling Pt:</b> 269-281°F; 132-138°C <b>Melting Pt:</b> -13o/-54m/56p°F; -25o/-48m/13p °C <b>Solubility:</b> 0.02 % <b>Flash Pt:</b> 81-90°F;27-32°C <b>LEL/LFL:</b> 0.9% <b>UEL/UFL:</b> 7.0% <b>Vapor Density:</b> 3.66 <b>Vapor Pressure:</b> 7-9 mmHg @ 70°F; 21° C <b>Specific Gravity:</b> 0.86-0.88 <b>Incompatibilities:</b> Strong oxidizers and strong acids <b>Appearance and odor:</b> Colorless liquid with an aromatic odor.	Effects may of overexposure include irritation at all points of contact, CNS changes (i.e. dizziness, excitement, drowsiness, incoherent, staggering gait), difficulty in breathing, pulmonary edema, and possibly respiratory failure.  Chronic effects may include dermatitis and cornea vacuolization.

**TABLE 6-1**  
**CHEMICAL, PHYSICAL, AND TOXICOLOGICAL DATA**  
**COASTAL SYSTEMS STATION, PANAMA CITY, FLORIDA – CTO 0201/0214**

Substance	CAS No.	Air Monitoring/Sampling Information		Exposure Limits	Warning Property Rating	Physical Properties	Health Hazard Information
General PAHs / Coal Tar Pitch Volatiles / Creosote / cresol (Fluoranthene, pyrene, benzo(a)anthracene, benzo(a)pyrene, benzo(f)fluoranthene, benzo(k)fluoranthene), etc.)	(CAS Numbers vary depending on specific compound)	PID: I.P. of 8.97 eV, relative response ratio unknown.  FID: Response factor unknown but given the substances flammability, detection by FID can be anticipated.	Refer to NIOSH methods for each specific compound for appropriate air sampling protocols.  Many PAHs can be sampled using NIOSH Method 5506 or 5515 - Teflon filter with support ring - High pressure liquid chromatography with UV detector. For cresol (a major constituent of creosote) by silica gel or xad-7 sorbent tube; Acetone desorption and analysis by gas chromatography - flame ionization detector or high-pressure liquid chromatography. (NIOSH Method #2001, or OSHA Method #32)	<b>General PAHs:</b>  Most PAHs have no established exposure limits. Coal Tar Pitch Volatiles / PAHs (including chrysene and benzo(a)pyrene) have an exposure limit of 0.2 mg/m <sup>3</sup> (OSHA and ACGIH).  0.1 mg/m <sup>3</sup> - (NIOSH) <b>Creosote / Cresol:</b> OSHA; ACGIH: 5 ppm NIOSH: 2.3 ppm IDLH: 80 mg/m <sup>3</sup>	Adequate - use a full-face air-purifying respirator with organic vapor / dust/mist cartridge up to 250 ppm. Cresol has an Odor Threshold of 0.00005-0.0079 ppm.  <b>Recommended gloves:</b> Viton >96.00 hrs; butyl rubber >90.00 hrs; neoprene >4.50 hrs	Properties of various PAHs/Coal Tar Pitch Volatiles vary depending upon the specific compound.  <u>For Creosote/Cresol:</u> <b>Boiling Pt:</b> 376-397°F; 191-203°C <b>Melting Pt:</b> 52-96°F; 10.9-35.5°C <b>Solubility:</b> Insoluble <b>Flash Pt:</b> 178°F; 81°C <b>LEL/LFL:</b> Not available <b>UEL/UFL:</b> Not available <b>Vapor Density:</b> 3.72 <b>Vapor Pressure:</b> 1 mmHg @ 100-127°F; 38-53°C <b>Specific Gravity:</b> 1.030-1.038 <b>Incompatibilities:</b> Nitric acid, oleum, chlorosulfonic acid, oxidizers <b>Appearance and Odor:</b> Yellowish or colorless, flammable, oily liquid (often brownish because of impurities or oxidation)	Regulated based on effects on respiratory tract and skin irritation. Other effects may include eye irritation and central nervous system, disturbances. Acute exposures may result in difficulty breathing, respiratory failure and skin and eye irritation and burns. Chronic exposure may damage the liver, kidneys, lungs and skin. Skin exposure may result in photosensitivity.  IARC, NTP, NIOSH, ACGIH, and the EPA list some PAHs such as benzo(a)pyrene as a potential carcinogen (ARC 2A, NTP-2, ACGIH TLV-A2, NIOSH-X, EPA-B2).
Naphthalene	91-20-3	PID: I.P. 8.12 eV, relative response ratio unknown.  No information was found as to the relative response for FID, however it is certain it is detectable at a high response.	Air sample using charcoal tube; carbon disulfide desorption; GC/FID detection. Sampling and analytical protocol in accordance with OSHA Method #35 or NIOSH Method #1501.	OSHA; NIOSH; ACGIH: 10 ppm  NIOSH; ACGIH: have established a STEL of 15 ppm.  IDLH: 250 ppm	Odor Threshold 0.038 ppm, Adequate - Use an air purifying respirator with organic vapors and dust/mists cartridges for concentrations up to 250 ppm.  <b>Recommended glove:</b> Nitrile >6.00 hrs; Neoprene >6.00 hrs	<b>Boiling Pt:</b> 424°F; 218°C <b>Melting Pt:</b> 176°F; 80°C <b>Solubility:</b> 0.003% <b>Flash Pt:</b> 174°F; 79°C <b>LEL/LFL:</b> 0.9% <b>UEL/UFL:</b> 5.9% <b>Vapor Density:</b> Not available <b>Vapor Pressure:</b> 1 mmHg <b>Specific Gravity:</b> 1.15 <b>Incompatibilities:</b> Strong oxidizers, chromic anhydride <b>Appearance and odor:</b> Colorless to brown solid with and odor of mothballs	Overexposure to this substance may result in irritation to the eyes, headache, confusion, excitement, nausea, vomiting, abdominal pain, irritation of the bladder, profuse sweating, jaundice, blood in the urine, renal (kidney shutdown), and dermatitis. Prolonged or chronic exposure may further cause optical neuritis, and corneal damage. Target organs are listed as eyes, blood, liver, kidneys, skin, red blood cells, and central nervous system.

**TABLE 6-1**  
**CHEMICAL, PHYSICAL, AND TOXICOLOGICAL DATA**  
**COASTAL SYSTEMS STATION, PANAMA CITY, FLORIDA – CTO 0201/0214**

Substance	CAS No.	Air Monitoring/Sampling Information		Exposure Limits	Warning Property Rating	Physical Properties	Health Hazard Information
Methylnaphthalene	90-12-0 (1-) 91-57-6 (2-) 1321-94-4	There is no information available regarding this substance. It is assumed that this substance based on its characteristics is detectable using an FID however, relative response ratio was not available.	Air sample using charcoal tube; carbon disulfide desorption; GC/FID detection; Sampling and analytical protocol in accordance with OSHA 07 or NIOSH Method #1501.	None established for this compound. However, it is recommended that 0.2 mg/m <sup>3</sup> for coal tar pitch volatiles be employed where excessive concentrations may exist. This is more relevant for those PAHs considered carcinogenic.	Information regarding this substance was limited. This material is a natural constituent of coal tar.  Adequate - Odor threshold 0.012-0.023 mg/m <sup>3</sup> . OSHA accepts the use of air-purifying respirators with organic vapor cartridge/HEPA filter up to 10 ppm, providing cartridges are changed at the beginning of each shift.  <b>Recommended gloves:</b> Butyl - >8.00 hrs; are recommended for other coal tar pitch associated substances; Neoprene >4.00 hrs; Nitrile >1.00 hrs	<b>Boiling Pt:</b> 434-507°F; 241-264°C <b>Melting Pt:</b> -8°F(1-), 94°F (2-); -22°C (1-), 35°C (2-) <b>Solubility:</b> Insoluble in water <b>Flash Pt:</b> Not available <b>LEL/LFL:</b> Not available <b>UEL/UFL:</b> Not available <b>Density:</b> 1.0058 (Beta isomer); 1.02 (alpha isomer) <b>Vapor Density:</b> 4.91 (1-) <b>Vapor Pressure:</b> 180-260 mmHg <b>Specific Gravity:</b> 0.994 (2-); 1.025(1-) <b>Incompatibilities:</b> Strong oxidizers, alkalis, and acids. <b>Appearance and Odor:</b> Colorless liquid (alpha isomer) with an acrid odor. The Beta isomer is a solid with slight odor.	Overexposure to this substance has shown to be a skin, eye, and mucous membrane irritant. This substance is not considered a photosensitizer. This substance is considered mildly to moderately toxic by ingestion.

## **7.0 HAZARD MONITORING**

Potential site contaminants are volatile organic compounds; direct reading instruments will be used at the site to evaluate the presence of detectable site contaminants and other potentially hazardous conditions. As a result, specific air monitoring measures and requirements are established in Table 5-1 pertaining to the specific hazards and tasks of an identified operation. Additionally, the Health and Safety Guidance Manual, Section 1.0, contains detailed information regarding direct reading instrumentation, as well as general calibration procedures of various instruments.

### **7.1 INSTRUMENTS AND USE**

Instruments will be used primarily to monitor source points and worker breathing zone areas, while observing instrument action levels. Action levels are discussed in Table 5-1 as they may apply to a specific task or location.

#### **7.1.1 Photoionization Detector or Flame Ionization Detector**

In order to accurately monitor for any substances which may present an exposure potential to site personnel, a Photoionization Detector (PID) using a lamp energy of 10.6 electron Volts (eV) or higher will be used. This instrument will be used to monitor potential source areas (monitoring wells, and sediments, etc.) and to screen the breathing zones of employees during site activities. The PID has been selected because it is capable of detecting potential organic vapors of concern (NOTE: A Flame Ionization Detector [FID] may be used as an alternative to the PID).

Prior to the commencement of any field activities, the background levels of the site must be determined and noted. Daily background readings will be taken away from any areas of potential contamination. These readings, any influencing conditions (i.e., weather, temperature, and humidity) and site location must be documented in the field operations logbook or other site documentation (e.g., sample log sheet).

#### **7.1.2 Hazard Monitoring Frequency**

Table 5-1 presents the frequencies that hazard monitoring will be performed as well as the action levels which will initiate the use of elevated levels of protection. The SSO may decide to increase these frequencies based on instrument responses and site observations. The frequency at which monitoring is performed will not be reduced without the prior consent of the PHSO or HSM.

### **7.2 INSTRUMENT MAINTENANCE AND CALIBRATION**

Hazard monitoring instruments will be maintained and pre-field calibrated by the TTNUS Equipment Manager. Operational checks and field calibration will be performed on all instruments each day prior to

their use. Field calibration will be performed on instruments according to manufacturer's recommendations (for example, the PID must be field calibrated daily and an additional field calibration must be performed at the end of each day to determine any significant instrument drift). These operational checks and calibration efforts will be performed in a manner that complies with the employees health and safety training, the manufacturer's recommendations, and with the applicable manufacturer standard operating procedure (copies of which can be found in the Health & Safety Guidance Manual which will be maintained on site for reference). All calibration efforts must be documented. Figure 7-1 is provided for documenting these calibration efforts. This information may instead be recorded in a field operations logbook, provided that all of the information specified in Figure 7-1 is recorded. This required information includes the following:

- Date calibration was performed
- Individual calibrating the instrument
- Instrument name, model, and serial number
- Any relevant instrument settings and resultant readings (before and after) calibration
- Identification of the calibration standard (lot no., source concentration, supplier)
- Any relevant comments or remarks

## DOCUMENTATION OF FIELD CALIBRATION

**PROJECT NO.:** \_\_\_\_\_

[illegible]

## **8.0 TRAINING/MEDICAL SURVEILLANCE REQUIREMENTS**

### **8.1 INTRODUCTORY/REFRESHER/SUPERVISORY TRAINING**

#### **8.1.1 Requirements for TTNUS Personnel**

All TTNUS personnel must complete 40 hours of introductory hazardous waste site training prior to performing work at CSS Panama City. Additionally, TTNUS personnel who have had introductory training more than 12 months prior to site work must have completed 8 hours of refresher training within the past 12 months before being cleared for site work. In addition, 8-hour supervisory training in accordance with 29 CFR 1910.120(e)(4) will be required for site supervisory personnel. Documentation of TTNUS introductory, supervisory, and refresher training as well as site-specific training will be maintained at the project. Copies of certificates or other official documentation will be used to fulfill this requirement.

TTNUS will conduct a pre-activities training session prior to initiating site work. Additionally, a brief meeting will be held daily to discuss operations planned for that day. At the end of the workday, a short meeting will be held to discuss the operations completed and any problems encountered. This activity will be supported through the use of a SWP System (See Section 10.11).

#### **8.1.2 Requirements for Subcontractors**

All TTNUS subcontractor personnel must have completed introductory hazardous waste site training or equivalent work experience as defined in OSHA Standard 29 CFR 1910.120(e) and 8 hours of refresher training meeting the requirements of 29 CFR 1910.120(e)(8) prior to performing field work at CSS Panama City. TTNUS subcontractors must certify that each employee has had such training by sending TTNUS a letter, on company letterhead, containing the information in the example letter provided in Figure 8-1, and providing copies of all training certificates.

**FIGURE 8-1  
TRAINING LETTER**

The following statements must be typed on company letterhead, signed by an officer of the company and accompanied by copies of personnel training certificates:

LOGO

XYZ CORPORATION  
555 E. 5th Street  
Nowheresville, Kansas 55555

Month, day, year

Mr. Paul Calligan  
Task Order Manager  
Tetra Tech NUS, Inc.  
5421 Beaumont Center Blvd.  
Suite 660  
Tampa, Florida 33634

Subject: HAZWOPER Training for the CSS Panama City Site

Dear Mr. Calligan:

As an officer of XYZ Corporation, I hereby state that I am aware of potential hazardous nature of the subject project. I also understand that is out responsibility to comply with all applicable occupational safety and health regulations including those stipulated in Title 29 of the Code of Federal Regulations (CFR), Parts 1900 through 1910 and Part 126.

I also understand that Title 29 CFR 1910.120 entitled "Hazardous Waste Operations and Emergency Response" requires appropriate level of training for certain employees engaged in hazardous waste operations. In this regard, I hereby state that the following employees have had 40 hours of introductory hazardous waste site training or equivalent work experience as requested by 29 CFR 1910.120(e) and have had 8 hours of refresher training as required by 29 CFR 1910.120(e)(8),

LIST FULL NAMES OF EMPLOYEES AND THEIR SOCIAL SECURITY NUMBERS HERE

Should you have any questions, please contact me at (555) 555-5555.

Sincerely,

(Name of Company Officer)

## **8.2 SITE-SPECIFIC TRAINING**

TTNUS will provide site-specific training to all site personnel who will perform work on this project. Site-specific training will also be provided to all personnel [U.S. Department of Defense (DOD), EPA, etc.] who may enter the site to perform functions that may or may not be directly related to site operations. Site-specific training will include:

- Names of designated personnel and alternates responsible for site safety and health
- Safety, health, and other hazards present on site
- Use of personal protective equipment
- Work practices to minimize risks from hazards
- Medical surveillance requirements
- Signs and symptoms of overexposure
- Contents of the HASP
- Contents of SWPs
- Emergency response procedures (evacuation and assembly points)
- Spill response procedures
- Review of the use SWPs

Site-specific documentation will be established through the use of Figure 8-2. All site personnel and visitors must sign this document upon receiving site-specific training.

## **8.3 MEDICAL SURVEILLANCE**

### **8.3.1 Medical Surveillance Requirements for TTNUS Personnel**

All TTNUS personnel participating in project field activities will have had a physical examination meeting the requirements of TTNUS's medical surveillance program and will be medically qualified to perform hazardous waste site work using respiratory protection

### **8.3.2 Medical Surveillance Requirements for Subcontractors**

Subcontractor personnel are required to obtain a certificate of their ability to perform hazardous waste site work and to wear respiratory protection. The "Subcontractor Medical Approval Form" provided in Figure 8-3 of this HASP can be used to satisfy this requirement providing that it is properly completed and signed by a licensed physician.

Subcontractors who have a company medical surveillance program meeting the requirements of paragraph (f) of OSHA 29 CFR 1910.120 can substitute "Subcontractor Medical Approval Form" with a letter, on company letterhead, containing all of the information in the example letter presented in Figure 8-4.

**FIGURE 8-2**

**SITE-SPECIFIC TRAINING DOCUMENTATION**

My signature below indicates that I am aware of the potential hazardous nature of performing surface water investigation activities at the CSS Panama City, Florida and that I have received site-specific training which included the elements presented below:

- Names of designated personnel and alternates responsible for site safety and health
- Safety, health, and other hazards present on site
- Use of personal protective equipment
- Work practices to minimize risks from hazards
- Medical surveillance requirements
- Signs and symptoms of overexposure
- Contents of the Health and Safety Plan
- Contents of Safe Work Permits
- Emergency response procedures (evacuation and assembly points)
- Spill response procedures
- Review of contents of relevant Material Safety Data Sheets
- Review of the use of Safe Work Permits

My signature below indicates that I have been given the opportunity to ask questions and that all of my questions have been answered to my satisfaction, and that the dates of my training and medical surveillance indicated below are accurate.

<b>Name (Printed and Signature)</b>	<b>Site- Specific Training Date</b>	<b>40-Hour Training (Date)</b>	<b>8-Hour Refresher Training (Date)</b>	<b>8-Hour Supervisory Training (Date)</b>	<b>Medical Exam</b>

**FIGURE 8-3  
SUBCONTRACTOR MEDICAL APPROVAL FORM**

For employees of \_\_\_\_\_  
Company Name

Participant Name: \_\_\_\_\_ Date of Exam: \_\_\_\_\_

**Part A**

The above-named individual has:

1. Undergone a physical examination in accordance with OSHA Standard 29 CFR 1910.120, paragraph (f) and found to be medically –  
  
☐ qualified to perform work at the CSS Panama City work site  
☐ not qualified to perform work at the CSS Panama City work site  
  
and,
2. Undergone a physical examination as per OSHA 29 CFR 1910.134(b)(10) and found to be medically -  
  
☐ qualified to wear respiratory protection  
☐ not qualified to wear respiratory protection

My evaluation has been based on the following information, as provided to me by the employer.

- ☐ A copy of OSHA Standard 29 CFR 1910.120 and appendices.
- ☐ A description of the employee's duties as they relate to the employee's exposures.
- ☐ A list of known/suspected contaminants and their concentrations (if known).
- ☐ A description of any personal protective equipment used or to be used.
- ☐ Information from previous medical examinations of the employee which is not readily available to the examining physician.

**Part B**

I, \_\_\_\_\_, have examined \_\_\_\_\_  
Physician's Name (print) Participant's Name (print)  
and have determined the following information:

**FIGURE 8-3**  
**SUBCONTRACTOR MEDICAL APPROVAL FORM**  
**PAGE TWO**

1. Results of the medical examination and tests (excluding findings or diagnoses unrelated to occupational exposure):  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. Any detected medical conditions that would place the employee at increased risk of material impairment of the employee's health:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. Recommended limitations upon the employee's assigned work:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I have informed this participant of the results of this medical examination and any medical conditions that require further examination or treatment.

Based on the information provided to me, and in view of the activities and hazard potentials involved at the CSS Panama City work site, this participant

☐ may  
☐ may not  
perform his/her assigned task.

Physician's Signature \_\_\_\_\_

Address \_\_\_\_\_

Phone Number \_\_\_\_\_

NOTE: Copies of test results are maintained and available at:

\_\_\_\_\_  
Address

### **8.3.3            Requirements for All Field Personnel**

Each field team member (including subcontractors and visitors entering the Exclusion Zone) shall be required to complete and submit a copy of the Medical Data Sheet found in Attachment V of this HASP. This shall be provided to the SSO prior to participating in site activities. The purpose of this document is to provide site personnel and emergency responders with additional information that may be necessary in order to administer medical attention.

### **8.4                SUBCONTRACTOR EXCEPTION**

Subcontractors who will not enter the Exclusion Zone during operation, and whose activities involve no potential for exposure to site contaminants, will not be required to meet the requirements for training/medical surveillance, other than site-specific training as stipulated in Section 8-2. **The use of this type of exception is permissible only with the prior consent of the CLEAN HSM.**

**FIGURE 8-4**  
**MEDICAL SURVEILLANCE LETTER**

The following statements must be typed on company letterhead and signed by an officer of the company:

LOGO  
XYZ CORPORATION  
555 E. 5th Street  
Nowheresville, Kansas 55555

Month, day, year

Mr. Paul Calligan  
Task Order Manager  
Tetra Tech NUS, Inc.  
5421 Beaumont Center Blvd.  
Suite 660  
Tampa, Florida 33634

Subject: Medical Surveillance for CSS Panama City Site

Dear Mr. Calligan:

As an officer of XYZ Corporation, I hereby state that the persons listed below participate in a medical surveillance program meeting the requirements contained in paragraph (f) of Title 29 of the Code of Federal Regulations (CFR), Part 1910.120 entitled "Hazardous Waste Operations and Emergency Response" I further state that the persons listed below have had physical examinations under this program within the past 12 months and that they have been cleared, by a licensed physician, to perform hazardous waste site work and to wear positive and negative pressure respiratory protection. I also state that, to my knowledge, no person listed below has any medical restriction that would preclude him/her from working at CSS Panama City Site.

LIST FULL NAMES OF EMPLOYEES AND THEIR SOCIAL SECURITY NUMBERS HERE

Should you have any questions, please contact me at (555) 555-5555.

Sincerely,

(Name of Company Officer)

Documentation for medical clearances will be maintained in the TtNUS Pittsburgh office and made available, as necessary.

## **9.0 SPILL CONTAINMENT PROGRAM**

### **9.1 SCOPE AND APPLICATION**

It is not anticipated that quantities of bulk potentially hazardous materials (greater than 55 gallons) will be handled during some of the site activities conducted as part of the scope of work. Significant quantities of wastewater (decontamination, and purge) and IDW may be generated as part of site activities. It is not anticipated, however, that spillage of these materials would constitute a significant danger to human health or the environment. Further, it is possible that as the job progresses disposable PPE and other non-reusable items may be generated. As needed, 55 gallon drums will be used to contain wastewater, IDW, and other unwanted items generated during investigatory activities. These drums will be labeled with the site name and location, drum number, the type of contents (purge waters), volume, the date, and point of contact with telephone number. An updated Inventory Log will be provided to the Base Contact (Mr. Arturo McDonald) and to the PM at the termination of every 10-day shift. This will be done to keep a running tab of containers retained within an established marshaling area.

Samples will be collected and analyzed to characterize the material and determine appropriate disposal measures. Once characterized they can be removed from the staging area and disposed of in accordance with Federal, State and local regulations.

### **9.2 POTENTIAL SPILL AREAS**

Potential spill areas will be monitored in an ongoing attempt to prevent and control further potential contamination of the environment. Currently, there are various areas vulnerable to this hazard including the following:

- Areas used for central staging of resources
- Areas used for central staging of IDW materials
- Decontamination area

Additionally, areas designated for handling, loading, and unloading of potentially contaminated waters, and debris present limited potential for leaks or spills. Monitoring of these areas will be done at least weekly.

### **9.2.1      Site Drums/Containers**

All drums/containers used for containing liquids will be sealed, labeled, and staged within a centralized area awaiting shipment or disposal. Drums used for the storage and transportation of IDW will meet the packaging requirements for steel drums category UN 1A2, removable head as specified in paragraph 9.6.1, United Nations Transport of Dangerous Goods.

#### **Staging Area Configuration**

The staging or marshaling area as referred to before will be configured to support this spill prevention and control program. The area will be configured as follows:

- Where possible secondary containment should be provided. This would include a bermed area sufficient in size to hold 10% of the total volume or the volume of largest container, whichever is greater. This calculation of secondary containment should also consider any displacement by containers or pallets. This bermed area should be lined (plastic liner or other impermeable surface) to prevent any spillage inside the containment from saturating the ground.
- Drums will be organized no more than four to a pallet. The drums label and the head bolt arranged as such to permit reading/review or removal of the head without requiring the drum to be moved on the pallet. Drums will be segregated to site and media. A minimum of two feet shall be maintained between each row of pallets to permit access for spill response measures.

### **9.3            LEAK AND SPILL DETECTION**

To establish an early detection of potential spills or leaks, a periodic (once a week) walk around by the SSO will be conducted during working hours to visually determine that containers are not leaking. If a leak is detected, the first approach will be to transfer the container contents using a hand pump into a new container. Other provisions for the transfer of container contents will be made and appropriate emergency contacts will be notified, if necessary. In most instances, leaks will be collected and contained using absorbents such as Oil-dry, vermiculite, or sand, which will be stored at the staging area in a conspicuously marked drum. This material too, will be containerized for disposal pending analyses. All inspections will be documented in the Project Logbook.

#### **9.4 PERSONNEL TRAINING AND SPILL PREVENTION**

All personnel will be instructed on the procedures for spill prevention, containment, and collection of hazardous materials in the site-specific training. The FOL and/or the SSO will serve as the Spill Response Coordinator for this operation should the need arise.

#### **9.5 SPILL PREVENTION AND CONTAINMENT EQUIPMENT**

The following represents the minimum equipment which will be maintained at the staging area at all times for the purpose of supporting this Spill Prevention/Containment Program.

Spill Response Equipment:

- Sand, clean fill, vermiculite, or other noncombustible absorbent (oil-dry);
- Drums (55 gallon U.N 1A2)
- Portable storage tanks or additional drums
- Shovels, rakes, and brooms
- Labels

PPE stored at the staging area:

- Rubber boot covers, nitrile outer gloves, PVC rain-suit or other form of impermeable splash protection, should it be required.

#### **9.6 SPILL CONTROL PLAN**

This section describes the procedures the TTNUS field crewmembers will employ upon the detection of a spill or leak.

- 1) Notify the SSO or FOL immediately upon the detection of a leak or spill.
- 2) Employ the personnel protective equipment stored at the staging area. Take immediate actions to stop the leak or spill by plugging or patching the drum or raising the leak to the highest point. Spread the absorbent material in the area of the spill covering completely.
- 3) Transfer the material to a new container, collect and containerize the absorbent material. Label the new container appropriately. Await analyses for treatment or disposal options.

- 4) All spills occurring on soils, grassy areas, gravel lots will be re-containerized including 2-inches of top cover on which the spill occurred, and await test results for treatment or disposal options.

It is not anticipated that a spill will occur in which the field crews cannot handle. Should this occur notification of appropriate emergency response agencies will be carried out by the FOL or SSO.

## **10.0 SITE CONTROL**

This section outlines the means by which TTNUS will delineate work zones and use these work zones in conjunction with decontamination procedures to prevent the spread of contaminants into previously unaffected areas of the site. It is anticipated that a three-zone approach will be used during work at this site. This three-zone approach will utilize an Exclusion Zone, a CRZ, and a Support Zone. It is also anticipated that this control measure will be used to control access to site work areas. Use of such controls will restrict the general public, minimize the potential for the spread of contaminants, and protect individuals who are not cleared to enter work areas.

### **10.1 EXCLUSION ZONE**

The Exclusion Zone will be considered those areas of the site of known or suspected contamination. It is not anticipated that significant amounts of surface contamination are present in the proposed work areas of this site. It is anticipated that this will remain so until/unless contaminants are brought to the surface by intrusive activities, such as soil boring or groundwater / free product sampling operations. Furthermore, once intrusive activities have been completed and surface contamination has been removed, the potential for exposure is again diminished and the area can then be reclassified as part of the CRZ. Therefore, the Exclusion Zones for this project will be limited to those areas of the site where active work is being performed plus a designated area surrounding the point of operation (see Table 5-1 for specific operation). The Exclusion Zone for this activity will be fragmented to represent the areas where the soil is disturbed through drilling or sampling activities. When possible, Exclusion Zones will be delineated using barrier tape, cones and/or drive poles, and postings to inform site personnel.

#### **10.1.1 Exclusion Zone Clearance**

Prior to the initiation of site activities, utility locations will be identified by utility companies contacted through the CSS Contact. Additional utility surveys may be conducted by TTNUS through the use of available documentation provided by CSS and/or local utility companies. The positions of identified utilities will be field located and staked, to minimize the potential for damage during intrusive activities. Sample locations can be located to avoid buried utilities. In the event that a utility is struck during a subsurface investigative activity, the emergency numbers provided in Section 2.9 and Table 2-1 will be notified.

Access to work areas will be controlled by TTNUS personnel. No personnel will be permitted to enter site Exclusion Zones without site-specific training. Site visitors will be provided site-specific training and will be escorted by TTNUS personnel at all times.

## **10.2 CONTAMINATION REDUCTION ZONE**

The CRZ will be a buffer area between the Exclusion Zone and any area of the site where contamination is not suspected. The personnel and equipment decontamination will not take place in this area, but will take place at a central location established for this project. This area instead will serve as a focal point in supporting Exclusion Zone activities. When applicable, this area will be delineated using barrier tape, cones and/or drive poles, and postings to inform and direct facility personnel.

## **10.3 SUPPORT ZONE**

The Support Zone for this project will include a staging area where site vehicles will be parked, equipment will be unloaded, and where food and drink containers will be maintained. In all cases, the Support Zones will be established at areas of the site where exposure to site contaminants would not be expected during normal working conditions or foreseeable emergencies.

## **10.4 SITE VISITORS**

Site visitors for the purpose of this document are identified as representing the following groups of individuals:

- Personnel invited to observe or participate in operations by TTNUS
- Regulatory personnel (EPA, OSHA, FDEP, etc.)
- Navy and CSS Field Personnel
- Other authorized visitors

All personnel working on this project are required to gain initial access to the site by coordinating with the TTNUS FOL or designee and following established site access procedures.

Once access to the site is obtained, visitors will be required to obtain permission from the FOL and SSO. Upon gaining access to the site, all site visitors wishing to observe operations in progress will be escorted by a TTNUS representative (arranged for by the FOL) and shall be required to meet the minimum requirements discussed below:

- All site visitors will be routed to the FOL, who will sign them into the field logbook. Information to be recorded in the logbook will include the individual's name (proper identification required), the entity which they represent, and the purpose of the visit.
- All site visitors will be required to produce the necessary information supporting clearance to the site. This shall include information attesting to applicable training (40-hours of HAZWOPER training) and medical surveillance as stipulated in Section 8.0 of this document. In addition, to enter the site operational zones during planned activities, all visitors will be required to first go through site-specific training covering the topics stipulated in Section 8.2 of this HASP.

Once the site visitors have completed the above items, they will be permitted to enter the operational zone. All visitors are required to observe the protective equipment and site restrictions in effect at the site at the time of their visit. Any and all visitors not meeting the requirements stipulated in this plan will not be permitted to enter the site operational zones during planned activities. Any incidence of unauthorized site visitation will cause the termination of all onsite activities until the unauthorized visitor is removed from the premises. Removal of unauthorized visitors will be accomplished with support from the FOL, SSO or on-site security personnel.

## **10.5 SITE SECURITY**

Site security will be accomplished using existing base security resources and procedures, supplemented by TTNUS or subcontractor personnel if necessary. TTNUS will retain control over active operational areas. The first line of security will take place at the station wide fences restricting the general public. The second line of security will take place at the work site referring interested parties to the FOL. The FOL will serve as a focal point for site personnel, and will serve as the final line of security and the primary enforcement contact.

## **10.6 SITE MAPS**

Once the areas of contamination, access routes, utilities, topography, and dispersion routes are determined, a site map will be generated and adjusted as site conditions change. These maps will show utility locations, potential points of contact with the public, roadways, and other significant characteristics that may impact site operations and safety. Site maps will be posted to illustrate up-to-date collection of contaminants and adjustment of zones and access points.

## **10.7 BUDDY SYSTEM**

Personnel engaged in onsite activities will practice the "buddy system" to ensure the safety of all personnel involved in this operation.

## **10.8 MATERIAL SAFETY DATA SHEET (MSDS) REQUIREMENTS**

TTNUS and subcontractor personnel will provide MSDSs for all chemicals brought on site. The contents of these documents will be reviewed by the SSO with the user(s) of the chemical substances prior to any actual use or application of the substances on site. A chemical inventory of all chemicals used on site will be developed using Tab 5 of the Health and Safety Guidance Manual. The MSDSs will then be maintained in a central location and will be available for anyone to review upon request.

## **10.9 COMMUNICATION**

TTNUS personnel will be working in close proximity to each other at NCSS. As a result, hand signals, voice commands, and line of site will provide sufficient means of communication. When project tasks are performed simultaneously on different sites, vehicle horns will be used to communicate emergency situations.

External communication will be accomplished by using either site, or cellular telephones or hand held two-way radios. All radio frequent emitting devices (two-way radios, cellular phones) will be approved by the base contact prior to use. External communication will primarily be used for the purpose of resource and emergency resource communications.

## **10.10 SAFE WORK PERMITS**

All Exclusion Zone work conducted in support of this project will be performed using SWPs to guide and direct field crews on a task by task basis. An example of the SWP to be used is illustrated in Figure 10-1. These work permits will be further supported by the daily meetings conducted during their generation. This effort will ensure all site-specific considerations and changing conditions are incorporated into the planning effort. All permits will require the signature of the FOL and SSO.

Use of these permits will provide the communication line for reviewing protective measures and hazards associated with each operation. This HASP will be used as the primary reference for selecting levels of

protection and control measures. The work permit will take precedence over the HASP when more conservative measures are required based on specific site conditions.

# **FIGURE 10-1** **SAFE WORK PERMIT**

Permit No. \_\_\_\_\_ Date: \_\_\_\_\_ Time: From \_\_\_\_\_ to \_\_\_\_\_

## **SECTION I: General Job Scope**

- I. Work limited to the following (description, area, equipment used): \_\_\_\_\_
- II. Required Monitoring Instruments: \_\_\_\_\_
- III. Field Crew: \_\_\_\_\_
- IV. On-site Inspection conducted ☐ Yes ☐ No Initials of Inspector TtNUS

## **SECTION II: General Safety Requirements** (To be filled in by permit issuer)

- V. Protective equipment required      Respiratory equipment required
- |                                  |                                  |  |   |
|----------------------------------|----------------------------------|--|---|
| Level D <input type="checkbox"/> | Level B <input type="checkbox"/> | Full face APR <input type="checkbox"/> | Escape Pack <input type="checkbox"/>    |
| Level C <input type="checkbox"/> | Level A <input type="checkbox"/> | Half face APR <input type="checkbox"/> | SCBA <input type="checkbox"/>           |
| Detailed on Reverse              |                                  | SAR <input type="checkbox"/>           | Bottle Trailer <input type="checkbox"/> |
|                                  |                                  | Skid Rig <input type="checkbox"/>      | None <input type="checkbox"/>           |

Modifications/Exceptions: \_\_\_\_\_

VI. Chemicals of Concern	Action Level(s)	Response Measures
_____	_____	_____
_____	_____	_____
_____	_____	_____

## VII. Additional Safety Equipment/Procedures

- |                                     |  |                                       |  |
|-------------------------------------|--|---------------------------------------|--|
| Hard-hat.....                       | <input type="checkbox"/> Yes <input type="checkbox"/> No | Hearing Protection (Plugs/Muffs) .... | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Safety Glasses .....                | <input type="checkbox"/> Yes <input type="checkbox"/> No | Safety belt/harness .....             | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Chemical/splash goggles.....        | <input type="checkbox"/> Yes <input type="checkbox"/> No | Radio.....                            | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Splash Shield.....                  | <input type="checkbox"/> Yes <input type="checkbox"/> No | Barricades.....                       | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Splash suits/coveralls .....        | <input type="checkbox"/> Yes <input type="checkbox"/> No | Gloves (Type - <u>Work</u> ).....     | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Steel toe Work shoes or boots ..... | <input type="checkbox"/> Yes <input type="checkbox"/> No | Work/rest regimen .....               | <input type="checkbox"/> Yes <input type="checkbox"/> No |

Modifications/Exceptions: \_\_\_\_\_

- |   |                          |                          |                         |                          |
|---|--------------------------|--------------------------|-------------------------|--------------------------|
| VIII. Procedure review with permit acceptors  | Yes                      | NA                       | Yes                     | NA                       |
| Safety shower/eyewash (Location & Use) .....  | <input type="checkbox"/> | <input type="checkbox"/> | Emergency alarms .....  | <input type="checkbox"/> |
| Procedure for safe job completion .....       | <input type="checkbox"/> | <input type="checkbox"/> | Evacuation routes ..... | <input type="checkbox"/> |
| Contractor tools/equipment/PPE inspected..... | <input type="checkbox"/> | <input type="checkbox"/> | Assembly points.....    | <input type="checkbox"/> |

## IX. Site Preparation

- |   |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|
| Utility Locating and Excavation Clearance completed .....     | Yes                      | No                       | NA                       |
| Vehicle and Foot Traffic Routes Cleared and Established ..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Physical Hazards Barricaded and Isolated .....                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Emergency Equipment Staged .....                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- X. Additional Permits required (Hot work, confined space entry, excavation etc.)..... ☐ Yes ☐ No  
*If yes, complete permit required or contact Health Sciences, Pittsburgh Office*

- XI. Special instructions, precautions: \_\_\_\_\_

Permit Issued by: \_\_\_\_\_ Permit Accepted by: \_\_\_\_\_

## 11.0 CONFINED SPACE ENTRY

It is not anticipated, under the proposed scope of work, that confined space and permit-required confined space activities will be conducted. **Therefore, personnel under the provisions of this HASP are not allowed, under any circumstances, to enter confined spaces.** A confined space is defined as an area which has one or more of the following characteristics:

- Is large enough and so configured that an employee can bodily enter and perform assigned work.
- Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry).
- Is not designed for continuous employee occupancy.

A Permit-Required Confined Space is one that:

- Contains or has a potential to contain a hazardous atmosphere.
- Contains a material that has the potential to engulf an entrant.
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.
- Contains any other recognized, serious, safety or health hazard.

For further information on confined space, consult the Health and Safety Guidance Manual or call the PHSO. If confined space operations are to be performed as part of the scope of work, detailed procedures and training requirements will have to be addressed, and the HSM will have to be notified.

## 12.0 MATERIALS AND DOCUMENTATION

The TTNUS FOL shall ensure the following materials/documents are taken to the project site and used when required.

- A complete copy of this HASP
- Health and Safety Guidance Manual
- Incident Reports
- Medical Data Sheets
- MSDSs for all chemicals brought on site, including decon solutions, fuels, lime, sample preservatives, calibration gases, etc.
- A full-size OSHA Job Safety and Health Poster (posted in the site trailers)
- Training/Medical Surveillance Documentation Form (Blank)
- Emergency Reference Form (Section 2.0, extra copy for posting)

### 12.1 MATERIALS TO BE POSTED AND MAINTAINED AT THE SITE

The following documentation is to be posted at the site for quick reference purposes. In situations where posting of these documents is not feasible (such as no office trailer), these documents should be filed in a transportable file container and immediately accessible. The file should remain in the FOL's possession.

**Chemical Inventory Listing (posted)-** This list represents all chemicals brought on site, including decontamination solutions, sample preservatives, fuel, calibration gases, etc.. This list should be posted in a central area.

**Material Safety Data Sheets (MSDSs) (maintained)-** The MSDSs should also be in a central area accessible to all site personnel. These documents should match all the listings on the chemical inventory

list for all substances employed on site. It is acceptable to have these documents within a central folder and the chemical inventory as the table of contents.

**The OSHA Job Safety & Health Protection Poster (posted)** - This poster, as directed by 29 CFR 1903.2 (a)(1), should be conspicuously posted in places where notices to employees are normally posted. Each FOL shall ensure that this poster is not defaced, altered, or covered by other material.

**Site Clearance (maintained)** - This list is found within the training section of the HASP (See Figure 8-2). This list identifies all site personnel, dates of training (including site-specific training), and medical surveillance and indicates not only clearance but also status. If personnel do not meet these requirements, they do not enter the site while site personnel are engaged in activities.

**Emergency Phone Numbers and Directions to the Hospital(s) (posted)** - This list of emergency numbers and hospital directions will be maintained at all phone communications points and in each site vehicle.

**Medical Data Sheets/Cards (maintained)**- Medical Data Sheets will be filled out by all onsite personnel and filed in a central location. The Medical Data Sheet will accompany any injury or illness requiring medical attention to the medical facility. A copy of this sheet or a wallet card will be given to all personnel to be carried on their person.

**Hearing Conservation Standard (29 CFR 1910.95)(posted)** - This standard will be posted anytime hearing protection or other noise abatement procedures are employed.

**Personnel Monitoring(maintained)** - All results generated through personnel sampling (levels of airborne toxics, noise levels, etc.) will be posted to inform individuals of the results of that effort.

**Placards and Labels(maintained)** - Where chemical inventories have been separated, because of quantities and incompatibilities, these areas will be conspicuously marked using Department of Transportation (DOT) placards and acceptable [Hazard Communication 29 CFR 1910.1200 (f)] labels.

The purpose of maintaining or posting this information, as stated above, is to allow site personnel quick access. Variations concerning location and methods of presentation are acceptable, providing the objection is accomplished.

### 13.0 ACRONYMS/ABBREVIATIONS

AOC	Area of Concern
AST	Aboveground Storage Tank
CAR	Contamination Assessment Report
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CLEAN	Comprehensive long-term Environmental Action Navy
CRZ	Contamination Reduction Zone
CSS	Coastal System Station
CTO	Contract Task Order
dBA	Decibal A-weighted Scale
DEET	N, N-diethyl-meta toluamide
DOD	Department of Defense
DOT	Department of Transportation
DPT	Direct Push Technology
EPA	Environmental Protection Agency
eV	electron Volts
FID	Flame Ionization Detector
FDEP	Florida Department of Environmental Protection
FOL	Field Operations Leader
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HSA	Hollow Stem Auger
HSM	Health and Safety Manager
IDW	Investigative Derived Wastes
IRA	Interim Remedial Action
MOP	Monitoring Only Plan
MSDS	Material Safety Data Sheet
N/A	Not Available
NIOSH	National Institute Occupational Safety and Health
NPL	National Priorities List
OSHA	Occupational Safety and Health Administration (U.S. Department of Labor)
PAHs	Polynuclear Aromatic Hydrocarbons
PEL	Permissible Exposure Limit
PHSO	Project Health and Safety Officer
PID	Photo Ionization Detector

PM	Project Manager
PPE	Personal Protective Equipment
PVC	Poly Vinyl Chloride
SAP	Sampling and Analysis Plan
SCBA	Self Contained Breathing Apparatus
SOP	Standard Operating Procedures
SSO	Site Safety Officer
STEL	Short Term Exposure Limit
SWMU	Solid Waste Management Unit
SWP	Safe Work Permit
TTNUS	Tetra Tech NUS, Inc.
TOM	Task Order Manager
TPH	Total Petroleum Hydrocarbons
TWA	Time Weighted Average
UST	Underground Storage Tank
UV	Ultra Violet
VOCs	Volatile Organic Compounds

# **ATTACHMENT I**

## **INJURY/ILLNESS PROCEDURE AND REPORT FORM**



CASE NO. \_\_\_\_\_

## **TETRA TECH NUS, INC.**

### **INJURY/ILLNESS PROCEDURE WORKER'S COMPENSATION PROGRAM**

---

#### **WHAT YOU SHOULD DO IF YOU ARE INJURED OR DEVELOP AN ILLNESS AS A RESULT OF YOUR EMPLOYMENT:**

- If injury is minor, obtain appropriate first aid treatment.
- If injury or illness is severe or life threatening, obtain professional medical treatment at the nearest hospital emergency room.
- If incident involves a chemical exposure on a project work site, follow instructions in the Health & Safety Plan.
- Immediately report any injury or illness to your supervisor or office manager. In addition, you must contact your Human Resources representative, Marilyn Diethorn at (412) 921-8475, and the Corporate Health and Safety Manager, Matt Soltis at (412) 921-8912 within 24 hours. You will be required to complete an Injury/Illness Report (attached). You may also be required to participate in a more detailed investigation from the Health Sciences Department.
- If further medical treatment is needed, The Hartford Network Referral Unit will furnish a list of network providers customized to the location of the injured employee. These providers are to be used for treatment of Worker's Compensation injuries subject to the laws of the state in which you work. Please call Marilyn Diethorn at (412) 921-8475 for the number of the Referral Unit.

#### **ADDITIONAL QUESTIONS REGARDING WORKER'S COMPENSATION:**

Contact your local human resources representative, corporate health and safety coordinator, or Corporate Administration in Pasadena, California, at (626) 351-4664.

Worker's compensation is a state-mandated program that provides medical and disability benefits to employees who become disabled due to job related injury or illness. Tetra Tech, Inc. and its subsidiaries (Tetra Tech or Company) pay premiums on behalf of their employees. The type of injuries or illnesses covered and the amount of benefits paid are regulated by the state worker's compensation boards and vary from state to state. Corporate Administration in Pasadena is responsible for administering the Company's worker's compensation program. The following is a general explanation of worker's compensation provided in the event that you become injured or develop an illness as a result of your employment with Tetra Tech or any of its subsidiaries. Please be aware that the term used for worker's compensation varies from state to state.

#### **WHO IS COVERED:**

All employees of Tetra Tech, whether they are on a full-time, part-time or temporary status, working in an office or in the field, are entitled to worker's compensation benefits. All employees must follow the above injury/illness reporting procedures. Consultants, independent contractors, and employees of subcontractors are not covered by Tetra Tech's Worker's Compensation plan.



CASE NO. \_\_\_\_\_

**WHAT IS COVERED:**

If you are injured or develop an illness caused by your employment, worker's compensation benefits are available to you subject to the laws of the state you work in. Injuries do not have to be serious; even injuries treated by first aid practices are covered and must be reported. Please note that if you are working out-of-state and away from your home office, you are still eligible for worker's compensation benefits.



CASE NO. \_\_\_\_\_

**TETRA TECH NUS, INC.**  
**INJURY/ILLNESS PROCEDURE**  
**WORKER'S COMPENSATION PROGRAM**

---

To: Corporate Health and Safety Manager  
Human Resource Administrator

Prepared by: \_\_\_\_\_

Position: \_\_\_\_\_

Project Name: \_\_\_\_\_

Office: \_\_\_\_\_

Project No. \_\_\_\_\_

Telephone: \_\_\_\_\_

**Information Regarding Injured or Ill Employee:**

Name: \_\_\_\_\_

Office: \_\_\_\_\_

Home address: \_\_\_\_\_

Gender: M ☐ F ☐ No. of dependents: \_\_\_\_\_

\_\_\_\_\_

Marital status: \_\_\_\_\_

Home telephone: \_\_\_\_\_

Date of birth: \_\_\_\_\_

Occupation (regular job title): \_\_\_\_\_

Social Security No.: \_\_\_\_\_

Department: \_\_\_\_\_

**Date of Accident:** \_\_\_\_\_

**Time of Accident:** \_\_\_\_\_

**Location of Accident** Was place of accident or exposure on employer's premises Yes ☐ No ☐

Street address: \_\_\_\_\_

City, state, and zip code: \_\_\_\_\_

County: \_\_\_\_\_

**Narrative Description of How Accident Occurred:** (Be specific. Explain what the employee was doing and how the accident occurred.)



**TETRA TECH, INC.**  
**INJURY/ILLNESS REPORT**

Did employee die? Yes ☐ No ☐

Was employee performing regular job duties? Yes ☐ No ☐

Was safety equipment provided? Yes ☐ No ☐

Was safety equipment used? Yes ☐ No ☐

Note: Attach any police reports or related diagrams to this accident report.

**Witness(es):**

Name:

Address:

Telephone:

**Describe the Illness or Injury and Part of Body Affected:**

**Name the Object or Substance which Directly Injured the Employee:**

**Medical Treatment Required:**

☐ No ☐ Yes ☐ First Aid Only

Physician's Name: \_\_\_\_\_

Address: \_\_\_\_\_

Hospital or Office Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone No.: \_\_\_\_\_

**Lost Work Days:**

☐ No. of Lost Work Days \_\_\_\_\_

Last Date Worked \_\_\_\_\_

Time Employee Left Work \_\_\_\_\_

Date Employee Returned to Work \_\_\_\_\_

☐ No. of Restricted Work Days \_\_\_\_\_

☐ None

**Corrective Action(s) Taken by Unit Reporting the Accident:****Corrective Action Still to be Taken (by whom and when):**

Name of Tetra Tech employee the injury or illness was first reported to: \_\_\_\_\_

Date of Report: \_\_\_\_\_ Time of Report: \_\_\_\_\_

	Printed Name	Signature	Telephone No.	Date
Project or Office Manager				
Site Safety Coordinator				
Injured Employee				

**To be completed by Human Resources:**

Date of hire:

Hire date in current job:

Wage information: \$ \_\_\_\_\_ per \_\_\_\_\_ (hour, day, week, or month)

Position at time of hire:

Shift hours:

State in which employee was hired:

Status: ☐ Full-time ☐ Part-time Hours per week: \_\_\_\_\_ Days per week: \_\_\_\_\_

Temporary job end date:

**To be completed during report to workers' compensation insurance carrier:**

Date reported:

Reported by:

TeleClaim phone number:

TeleClaim account number:

Location code:

Confirmation number:

Name of contact:

Field office of claims adjuster:

## **ATTACHMENT II**

### **UTILITY LOCATING AND EXCAVATION CLEARANCE**

### MEDICAL DATA SHEET

This Medical Data Sheet must be completed by all on-site personnel and kept in the command post during the conduct of site operations. This data sheet will accompany any personnel when medical assistance is needed or if transport to hospital facilities is required.

Project \_\_\_\_\_

Name \_\_\_\_\_ Home Telephone \_\_\_\_\_

Address \_\_\_\_\_

Age \_\_\_\_\_ Height \_\_\_\_\_ Weight \_\_\_\_\_

Name of Next Kin \_\_\_\_\_

Drug or other Allergies \_\_\_\_\_

Particular Sensitivities \_\_\_\_\_

Do You Wear Contacts? \_\_\_\_\_

Provide a Checklist of Previous Illnesses or Exposure to Hazardous Chemicals \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

What medications are you presently using? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Do you have any medical restrictions? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Name, Address, and Phone Number of personal physician: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

=====

I am the individual described above. I have read and understand this HASP.

\_\_\_\_\_

Signature

\_\_\_\_\_

Date

## **ATTACHMENT III**

# **EQUIPMENT INSPECTION CHECKLIST**

## EQUIPMENT INSPECTION

**COMPANY:** \_\_\_\_\_ **UNIT NO.** \_\_\_\_\_

**FREQUENCY:** Inspect daily, document prior to use and as repairs are needed.

Inspection Date: \_\_\_\_/\_\_\_\_/\_\_\_\_ Time: \_\_\_\_\_ Equipment Type: \_\_\_\_\_

(e.g., bulldozer)

	Good	Need Repair	N/A
Tires or tracks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hoses and belts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cab, mirrors, safety glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Turn signals, lights, brake lights, etc. (front/rear) for equipment approved for highway use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Is the equipment equipped with audible back-up alarms and back-up lights?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Horn and gauges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brake condition (dynamic, park, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fire extinguisher (Type/Rating - _____)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fluid Levels:			
- Engine oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Transmission fluid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Brake fluid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Cooling system fluid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Windshield wipers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Hydraulic oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Oil leak/lube	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coupling devices and connectors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exhaust system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Blade/boom/ripper condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accessways: Frame, hand holds, ladders, walkways (non-slip surfaces), guardrails?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Power cable and/or hoist cable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Steering (standard and emergency)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Safety Guards:

	Yes	No
- Around rotating apparatus (belts, pulleys, sprockets, spindles, drums, flywheels, chains) all points of operations protected from accidental contact? _____	<input type="checkbox"/>	<input type="checkbox"/>
- Hot pipes and surfaces exposed to accidental contact? _____	<input type="checkbox"/>	<input type="checkbox"/>
- All emergency shut offs have been identified and communicated to the field crew? _____	<input type="checkbox"/>	<input type="checkbox"/>
- Have emergency shutoffs been field tested? _____	<input type="checkbox"/>	<input type="checkbox"/>
- Results? _____	<input type="checkbox"/>	<input type="checkbox"/>
- Are any structural members bent, rusted, or otherwise show signs of damage? _____	<input type="checkbox"/>	<input type="checkbox"/>
- Are fueling cans used with this equipment approved type safety cans? _____	<input type="checkbox"/>	<input type="checkbox"/>

- Have the attachments designed for use (as per manufacturer's recommendation) with this equipment been inspected and are considered suitable for use? \_\_\_\_\_ ☐ ☐

#### **Portable Power Tools:**

- Tools and Equipment in Safe Condition? \_\_\_\_\_ ☐ ☐
- Saw blades, grinding wheels free from recognizable defects (grinding wheels have been sounded)? \_\_\_\_\_ ☐ ☐
- Portable electric tools properly grounded? \_\_\_\_\_ ☐ ☐
- Damage to electrical power cords? \_\_\_\_\_ ☐ ☐
- Blade guards in place? \_\_\_\_\_ ☐ ☐
- Components adjusted as per manufacturers recommendation? \_\_\_\_\_ ☐ ☐

#### **Cleanliness:**

- Overall condition (is the decontamination performed prior to arrival on-site considered acceptable)? \_\_\_\_\_
- Where was this equipment used prior to its arrival on site? \_\_\_\_\_
- Site Contaminants of concern at the previous site? \_\_\_\_\_
- Inside debris (coffee cups, soda cans, tools and equipment) blocking free access to foot controls? \_\_\_\_\_

#### **Operator Qualifications (as applicable for all heavy equipment):**

- Does the operator have proper licensing where applicable, (e.g., CDL)? \_\_\_\_\_
- Does the operator, understand the equipments operating instructions? \_\_\_\_\_
- Is the operator experienced with this equipment? \_\_\_\_\_
- Does the operator have emotional and/or physical limitations which would prevent him/her from performing this task in a safe manner? \_\_\_\_\_
- Is the operator 21 years of age or more? \_\_\_\_\_

#### **Identification:**

- Is a tagging system available, for positive identification, for tools removed from service? \_\_\_\_\_

#### **Additional Inspection Required Prior to Use On-Site**

- |  | <b>Yes</b>               | <b>No</b>                |
|--|--------------------------|--------------------------|
| - Does equipment emit noise levels above 90 decibels?                      | <input type="checkbox"/> | <input type="checkbox"/> |
| - If so, has an 8-hour noise dosimetry test been performed?                | <input type="checkbox"/> | <input type="checkbox"/> |
| - Results of noise dosimetry: _____  |                          |                          |
| - Defects and repairs needed: _____  |                          |                          |
| - General Safety Condition: _____  |                          |                          |
| - Operator or mechanic signature: _____                                    |                          |                          |
| Approved for Use: <input type="checkbox"/> Yes <input type="checkbox"/> No |                          |                          |

\_\_\_\_\_  
Site Safety Officer Signature

**ATTACHMENT IV**

**SAFE WORK PERMITS**

# **SAFE WORK PERMIT** **DECONTAMINATION ACTIVITIES** **COASTAL SYSTEMS STATION, PANAMA CITY FLORIDA**

Permit No. \_\_\_\_\_ Date: \_\_\_\_\_ Time: From \_\_\_\_\_ to \_\_\_\_\_

## **SECTION I: General Job Scope**

- I. Work limited to the following (description, area, equipment used): Decontamination of sampling equipment. Brushes and spray bottles will be used to decon small sampling equipment - pressure washers will be used to decontaminate heavy equipment.
- II. Required Monitoring Instrument(s): None required
- III. Field Crew: \_\_\_\_\_
- IV. On-site Inspection conducted ☒ Yes ☐ No Initials of Inspector TINUS

## **SECTION II: General Safety Requirements (To be filled in by permit issuer)**

- |  |  |
|--|--|
| <p>IV. Protective equipment required</p> <p>Level D <input checked="" type="checkbox"/> Level B <input type="checkbox"/><br/>         Level C <input type="checkbox"/> Level A <input type="checkbox"/><br/>         Detailed on Reverse</p> | <p>Respiratory equipment required</p> <p>Full face APR <input type="checkbox"/> Escape Pack <input type="checkbox"/><br/>         Half face APR <input type="checkbox"/> SCBA <input type="checkbox"/><br/>         SKA-PAC SAR <input type="checkbox"/> Bottle Trailer <input type="checkbox"/><br/>         Skid Rig <input type="checkbox"/> None <input checked="" type="checkbox"/></p> |
|--|--|

Modifications/Exceptions: Minimum requirement include sleeved shirt and long pants, safety glasses, safety footwear, and nitrile gloves.

- | V. Chemicals of Concern             | Action Level(s)                 | Response Measures                    |
|-------------------------------------|---------------------------------|--------------------------------------|
| <u>Site contaminants include</u>    | <u>Any sustained readings</u>   | <u>Suspend site activities</u>       |
| <u>Low levels of VOCs, TPH, PAH</u> | <u>above 15 ppm</u>             | <u>report to an unaffected area.</u> |
| <u>Decon fluids</u>                 | <u>in worker breathing zone</u> |                                      |

## VI. Additional Safety Equipment/Procedures

- |                               |   |   |
|-------------------------------|---|---|
| Hard-hat.....                 | <input type="checkbox"/> Yes <input type="checkbox"/> No            | Hearing Protection (Plugs/Muffs) <input type="checkbox"/> Yes <input type="checkbox"/> No   |
| Safety Glasses .....          | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Safety belt/harness <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No     |
| Chemical/splash goggles.....  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Radio <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                   |
| Splash Shield.....            | <input type="checkbox"/> Yes <input type="checkbox"/> No            | Barricades <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No              |
| Splash suits/coveralls .....  | <input type="checkbox"/> Yes <input type="checkbox"/> No            | Gloves (Type - Nitrile) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Steel toe Work shoes or boots | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Work/rest regimen <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No       |

Modifications/Exceptions: PVC rain suits or PE or PVC coated Tyvek for protection against splashes and overspray. Chemical resistant boot covers if excessive liquids are generated or to protected footwear. Face shields, hard hats, and hearing protection when using pressure washers.

- |  |   |
|--|---|
| VII. Procedure review with permit acceptors    | Yes NA  |
| Safety shower/eyewash (Location & Use) .....   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> NA |
| Procedure for safe job completion .....        | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> NA |
| Contractor tools/equipment/PPE inspected ..... | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> NA |

- |   |   |
|---|---|
| VIII. Site Preparation  | Yes NA  |
| Utility Locating and Excavation Clearance completed .....     | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> NA |
| Vehicle and Foot Traffic Routes Cleared and Established ..... | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> NA |
| Physical Hazards Barricaded and Isolated .....                | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> NA |
| Emergency Equipment Staged .....                              | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> NA |

- IX. Additional Permits required (Hot work, confined space entry, excavation etc.) ☐ Yes ☒ No  
*If yes, complete permit required or contact Health Sciences, Pittsburgh Office*

- X. Special instructions, precautions: Chemical hazards with decontamination because of use of fluids such as isopropyl alcohol, methanol, etc. To minimize the potential for exposure, site personnel will use PPE and prevent contact with potentially contaminated equipment. Refer to the manufacturer's MSDS regarding PPE, handling, storage, and first-aid measures related to decontamination fluids.

Permit Issued by: \_\_\_\_\_ Permit Accepted by: \_\_\_\_\_

**SAFE WORK PERMIT FOR  
MOBILIZATION AND DEMOBILIZATION ACTIVITIES  
COASTAL SYSTEMS STATION, PANAMA CITY FLORIDA**

Permit No. \_\_\_\_\_ Date: \_\_\_\_\_ Time: From \_\_\_\_\_ to \_\_\_\_\_

**SECTION I: General Job Scope**

- I. Work limited to the following (description, area, equipment used): Mobilization and demobilization activities
- II. Required Monitoring Instruments: None
- III. Field Crew: \_\_\_\_\_
- IV. On-site Inspection conducted ☒ Yes ☐ No Initials of Inspector \_\_\_\_\_

TtNUS

**SECTION II: General Safety Requirements (To be filled in by permit issuer)**

- V. Protective equipment required      Respiratory equipment required
- |  |  |  |
|--|--|--|
| Level D <input checked="" type="checkbox"/> Level B <input type="checkbox"/> | Full face APR <input type="checkbox"/> | Escape Pack <input type="checkbox"/>     |
| Level C <input type="checkbox"/> Level A <input type="checkbox"/>            | Half face APR <input type="checkbox"/> | SCBA <input type="checkbox"/>            |
| Detailed on Reverse  | SAR <input type="checkbox"/>           | Bottle Trailer <input type="checkbox"/>  |
|  | Skid Rig <input type="checkbox"/>      | None <input checked="" type="checkbox"/> |

Modifications/Exceptions: Minimum requirement include sleeved shirt and long pants, safety glasses and safety footwear. Hard hats and hearing protection will be worn when working near operating equipment.

- VI. Chemicals of Concern      Action Level(s)      Response Measures
- None anticipated given the nature of surveying activities and limited contact w/ media.

**VII. Additional Safety Equipment/Procedures**

- |                               |   |  |
|-------------------------------|---|--|
| Hard-hat.....                 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Hearing Protection (Plugs/Muffs) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Safety Glasses .....          | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Safety belt/harness <input type="checkbox"/> Yes <input type="checkbox"/> No                         |
| Chemical/splash goggles ..... | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Radio <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                            |
| Splash Shield.....            | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Barricades <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                       |
| Splash suits/coveralls .....  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Gloves (Type - Nitrile) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No          |
| Steel toe Work shoes or boots | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Work/rest regimen <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                |

Modifications/Exceptions: Reflective vests for high traffic areas. Tyvek coverall to protect against natural hazards (e.g., ticks). If working in areas where snakes are a threat, wear snake chaps to protect against bites.

- VIII. Procedure review with permit acceptors      Yes      NA      Yes      NA
- |  |  |                         |  |
|--|--|-------------------------|--|
| Safety shower/eyewash (Location & Use) .....   | <input type="checkbox"/> Yes <input type="checkbox"/> NA | Emergency alarms .....  | <input type="checkbox"/> Yes <input type="checkbox"/> NA |
| Procedure for safe job completion .....        | <input type="checkbox"/> Yes <input type="checkbox"/> NA | Evacuation routes ..... | <input type="checkbox"/> Yes <input type="checkbox"/> NA |
| Contractor tools/equipment/PPE inspected ..... | <input type="checkbox"/> Yes <input type="checkbox"/> NA | Assembly points .....   | <input type="checkbox"/> Yes <input type="checkbox"/> NA |

- IX. Site Preparation      Yes      NA
- |   |  |
|---|--|
| Utility Locating and Excavation Clearance completed.....      | <input type="checkbox"/> Yes <input type="checkbox"/> NA |
| Vehicle and Foot Traffic Routes Cleared and Established ..... | <input type="checkbox"/> Yes <input type="checkbox"/> NA |
| Physical Hazards Barricaded and Isolated .....                | <input type="checkbox"/> Yes <input type="checkbox"/> NA |
| Emergency Equipment Staged .....                              | <input type="checkbox"/> Yes <input type="checkbox"/> NA |

- X. Additional Permits required (Hot work, confined space entry, excavation etc.)..... ☐ Yes ☐ No  
*If yes, complete permit required or contact Health Sciences, Pittsburgh Office*

XI. Special instructions, precautions: Preview work locations to identify potential hazards (slips, trips, and falls, natural hazards, etc.) Avoid potential nesting areas. Wear light colored clothing so that ticks and other biting insects can be easily visible and can be removed. Inspect clothing and body for ticks. Minimize contact with potentially contaminated media. Suspend site activities in the event of inclement weather.

Permit Issued by: \_\_\_\_\_ Permit Accepted by: \_\_\_\_\_

**SAFE WORK PERMIT FOR  
MOBILIZATION AND DEMOBILIZATION ACTIVITIES  
COASTAL SYSTEMS STATION, PANAMA CITY FLORIDA**

**SAFE WORK PERMIT FOR  
MULTI MEDIA SAMPLING  
COASTALSYSTEMS STATION, PANAMA CITY FLORIDA**

Permit No. \_\_\_\_\_ Date: \_\_\_\_\_ Time: From \_\_\_\_\_ to \_\_\_\_\_

**SECTION I: General Job Scope**

- I. Work limited to the following (description, area, equipment used): Multi media sampling including ground water and soils. This SWP also includes handling IDW since similar hazards are associated with that activity.
- II. Required Monitoring Instrument(s): PID with a10.6 eV lamp or FID
- III. Field Crew: \_\_\_\_\_
- IV. On-site Inspection conducted ☒ Yes ☐ No Initials of Inspector TINUS

**SECTION II: General Safety Requirements (To be filled in by permit issuer)**

- V. Protective equipment required Respiratory equipment required
- |  |  |  |
|--|--|--|
| Level D <input checked="" type="checkbox"/> Level B <input type="checkbox"/> | Full face APR <input type="checkbox"/> | Escape Pack <input type="checkbox"/>     |
| Level C <input type="checkbox"/> Level A <input type="checkbox"/>            | Half face APR <input type="checkbox"/> | SCBA <input type="checkbox"/>            |
| Detailed on Reverse  | SAR <input type="checkbox"/>           | Bottle Trailer <input type="checkbox"/>  |
|  | Skid Rig <input type="checkbox"/>      | None <input checked="" type="checkbox"/> |

Modifications/Exceptions: Minimum requirement include sleeved shirt and long pants, safety footwear, and nitrile gloves

VI. Chemicals of Concern	Action Level(s)	Response Measures
Site contaminants include	Any sustained readings	Suspend site activities
<u>Low levels of VOCs, TPH, PAH</u>	<u>above 15 ppm</u>	<u>report to an unaffected area.</u>
	<u>in worker breathing zone</u>	

**VII. Additional Safety Equipment/Procedures**

Hard-hat.....	<input type="checkbox"/> Yes <input type="checkbox"/> No	Hearing Protection (Plugs/Muffs) <input type="checkbox"/> Yes <input type="checkbox"/> No
Safety Glasses .....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Safety belt/harness <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Chemical/splash goggles .....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Radio <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Splash Shield.....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Barricades <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Splash suits/coveralls .....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Gloves (Type - Nitrile) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Steel toe Work shoes or boots	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Work/rest regimen <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Modifications/Exceptions: Reflective vests for high traffic areas. Tyvek coverall if there is a potential for soiling work cloths and PVC or PE coated Tyvek if saturation or work cloths may occur. Hearing protection and hard hat when working in vicinity of operating drill rig/DPT.

VIII. Procedure review with permit acceptors	Yes	NA	Yes	NA
Safety shower/eyewash (Location & Use) .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Procedure for safe job completion .....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Contractor tools/equipment/PPE inspected .....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			<input checked="" type="checkbox"/>	<input type="checkbox"/>

**IX. Site Preparation**

	Yes	NA
Utility Locating and Excavation Clearance completed.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vehicle and Foot Traffic Routes Cleared and Established.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Physical Hazards Barricaded and Isolated.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Emergency Equipment Staged.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- X. Additional Permits required (Hot work, confined space entry, excavation etc.)..... ☐ Yes ☐ No  
*If yes, complete permit required or contact Health Sciences, Pittsburgh Office*
- XI. Special instructions, precautions Use proper lifting techniques as presented in Table 5-1 when handling sampling equipment, coolers, and IDW containers. Avoid contact with potentially contaminated media or free product (when sampling from monitoring wells).

Permit Issued by: \_\_\_\_\_ Permit Accepted by: \_\_\_\_\_

**SAFE WORK PERMIT FOR  
MULTI MEDIA SAMPLING  
COASTAL SYSTEMS STATION, PANAMA CITY FLORIDA**

**SAFE WORK PERMIT FOR  
SOIL BORING AND SUBSURFACE SOIL SAMPLING OPERATIONS  
COASTAL SYSTEMS STATION, PANAMA CITY FLORIDA**

Permit No. \_\_\_\_\_ Date: \_\_\_\_\_ Time: From \_\_\_\_\_ to \_\_\_\_\_

**SECTION I: General Job Scope**

- I. Work limited to the following (description, area, equipment used): Monitoring well installation and subsurface soil sampling collected via DPT and/or HSA.
- II. Required Monitoring Instruments: PID with 10.6 eV lamp or FID
- III. Field Crew: \_\_\_\_\_
- IV. On-site Inspection conducted ☒ Yes ☐ No Initials of Inspector TtNUS

**SECTION II: General Safety Requirements (To be filled in by permit issuer)**

- |   |  |  |
|---|--|--|
| <p>V. Protective equipment required</p> <p>Level D <input checked="" type="checkbox"/> Level B <input type="checkbox"/></p> <p>Level C <input type="checkbox"/> Level A <input type="checkbox"/></p> <p>Detailed on Reverse</p> | <p>Respiratory equipment required</p> <p>Full face APR <input type="checkbox"/></p> <p>Half face APR <input type="checkbox"/></p> <p>SAR <input type="checkbox"/></p> <p>Skid Rig <input type="checkbox"/></p> | <p>Escape Pack <input type="checkbox"/></p> <p>SCBA <input type="checkbox"/></p> <p>Bottle Trailer <input type="checkbox"/></p> <p>None <input type="checkbox"/></p> |
|---|--|--|

Modifications/Exceptions: Minimum requirement include sleeved shirt and long pants, safety footwear, and nitrile gloves. Safety glasses, hard hats, and hearing protection will be worn when working near or sampling in the vicinity of the drill rig/DPT or other operating equipment.

- |   |  |  |
|---|--|--|
| <p>VI. Chemicals of Concern</p> <p>Site contaminants include</p> <p><u>Low levels of VOCs, TPH, PAH</u></p> | <p>Action Level(s)</p> <p>Any sustained readings</p> <p><u>above 15 ppm</u></p> <p><u>in worker breathing zone</u></p> | <p>Response Measures</p> <p><u>Suspend site activities</u></p> <p><u>report to an unaffected area.</u></p> |
|---|--|--|

**VII. Additional Safety Equipment/Procedures**

- |                                     |   |  |   |
|-------------------------------------|---|--|---|
| Hard-hat.....                       | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Hearing Protection (Plugs/Muffs) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Safety Glasses .....                | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Safety belt/harness .....  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Chemical/splash goggles.....        | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Radio .....  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Splash Shield.....                  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Barricades .....   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Splash suits/coveralls .....        | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Gloves (Type - Nitrile) .....  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Steel toe Work shoes or boots ..... | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Work/rest regimen .....  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
- Modifications/Exceptions: Reflective vests for high traffic areas. Tyvek coverall if there is a potential for soiling work cloths. PVC or PE coated Tyvek if saturation or work cloths may occur.

- |  |                                     |                          |                         |                                     |
|--|-------------------------------------|--------------------------|-------------------------|-------------------------------------|
| VIII. Procedure review with permit acceptors   | Yes                                 | NA                       | Yes                     | NA                                  |
| Safety shower/eyewash (Location & Use) .....   | <input type="checkbox"/>            | <input type="checkbox"/> | Emergency alarms .....  | <input checked="" type="checkbox"/> |
| Procedure for safe job completion .....        | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Evacuation routes ..... | <input checked="" type="checkbox"/> |
| Contractor tools/equipment/PPE inspected ..... | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Assembly points .....   | <input checked="" type="checkbox"/> |

**IX. Site Preparation**

- |   |                                     |                          |                          |
|---|-------------------------------------|--------------------------|--------------------------|
|   | Yes                                 | No                       | NA                       |
| Utility Locating and Excavation Clearance completed.....      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Vehicle and Foot Traffic Routes Cleared and Established ..... | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Physical Hazards Barricaded and Isolated .....                | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Emergency Equipment Staged .....                              | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- X. Additional Permits required (Hot work, confined space entry, excavation etc.)..... ☐ Yes ☐ No  
*If yes, complete permit required or contact Health Sciences, Pittsburgh Office*

- XI. Special instructions, precautions: Perform equipment inspections in accordance with the HASP using Attachment III. Minimize the number of personnel in the work area. Avoid potentially contaminated media and perform decontamination and hand/face washing prior to eating or other hand to mouth activities.

**SAFE WORK PERMIT FOR  
SOIL BORING AND SUBSURFACE SOIL SAMPLING OPERATIONS  
COASTAL SYSTEMS STATION, PANAMA CITY FLORIDA**

Permit Issued by: \_\_\_\_\_ Permit Accepted by: \_\_\_\_\_

**SAFE WORK PERMIT  
DECONTAMINATION ACTIVITIES  
COASTAL SYSTEMS STATION, PANAMA CITY FLORIDA**

Permit No. \_\_\_\_\_ Date: \_\_\_\_\_ Time: From \_\_\_\_\_ to \_\_\_\_\_

**SECTION I: General Job Scope**

- I. Work limited to the following (description, area, equipment used): Surveying activities
- II. Required Monitoring Instrument(s): None required
- III. Field Crew: \_\_\_\_\_
- IV. On-site Inspection conducted ☒ Yes ☐ No Initials of Inspector TINUS

**SECTION II: General Safety Requirements (To be filled in by permit issuer)**

- |  |  |  |
|--|--|--|
| IV. Protective equipment required  | Respiratory equipment required         |  |
| Level D <input checked="" type="checkbox"/> Level B <input type="checkbox"/> | Full face APR <input type="checkbox"/> | Escape Pack <input type="checkbox"/>     |
| Level C <input type="checkbox"/> Level A <input type="checkbox"/>            | Half face APR <input type="checkbox"/> | SCBA <input type="checkbox"/>            |
| Detailed on Reverse  | SKA-PAC SAR <input type="checkbox"/>   | Bottle Trailer <input type="checkbox"/>  |
|  | Skid Rig <input type="checkbox"/>      | None <input checked="" type="checkbox"/> |

Modifications/Exceptions: Minimum requirement include sleeved shirt and long pants, safety glasses, and safety footwear. Use reflective vests when working near traffic areas.

- V. Chemicals of Concern                      Action Level(s)                      Response Measures

None anticipated given the  
nature of surveying activities  
and limited contact w/ media.

VI. Additional Safety Equipment/Procedures

- |                               |   |  |
|-------------------------------|---|--|
| Hard-hat.....                 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Hearing Protection (Plugs/Muffs) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Safety Glasses .....          | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Safety belt/harness <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No              |
| Chemical/splash goggles.....  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Radio <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                            |
| Splash Shield.....            | <input type="checkbox"/> Yes <input type="checkbox"/> No            | Barricades <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                       |
| Splash suits/coveralls .....  | <input type="checkbox"/> Yes <input type="checkbox"/> No            | Gloves (Type - Nitrile) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No          |
| Steel toe Work shoes or boots | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Work/rest regimen <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                |

Modifications/Exceptions: \_\_\_\_\_

- |  |                                     |                                     |                         |                                     |                          |
|--|-------------------------------------|-------------------------------------|-------------------------|-------------------------------------|--------------------------|
| VII. Procedure review with permit acceptors    | Yes                                 | NA                                  |                         | Yes                                 | NA                       |
| Safety shower/eyewash (Location & Use).....    | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Emergency alarms .....  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Procedure for safe job completion.....         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Evacuation routes ..... | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Contractor tools/equipment/PPE inspected ..... | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Assembly points.....    | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

- |  |                          |                                     |
|--|--------------------------|-------------------------------------|
| VIII. Site Preparation                                       | Yes                      | NA                                  |
| Utility Locating and Excavation Clearance completed .....    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Vehicle and Foot Traffic Routes Cleared and Established..... | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Physical Hazards Barricaded and Isolated.....                | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Emergency Equipment Staged.....                              | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

- IX. Additional Permits required (Hot work, confined space entry, excavation etc.) ☐ Yes ☒ No  
If yes, complete permit required or contact Health Sciences, Pittsburgh Office

- X. Special instructions, precautions: Avoid potential nesting areas or poisonous plants. Be aware of potential slip, trip and fall hazards.

Permit Issued by: \_\_\_\_\_ Permit Accepted by: \_\_\_\_\_

**ATTACHMENT V**

**MEDICAL DATA SHEET**

### MEDICAL DATA SHEET

This Medical Data Sheet must be completed by all on-site personnel and kept in the command post during the conduct of site operations. This data sheet will accompany any personnel when medical assistance is needed or if transport to hospital facilities is required.

Project \_\_\_\_\_

Name \_\_\_\_\_ Home Telephone \_\_\_\_\_

Address \_\_\_\_\_

Age \_\_\_\_\_ Height \_\_\_\_\_ Weight \_\_\_\_\_

Name of Next Kin \_\_\_\_\_

Drug or other Allergies \_\_\_\_\_

Particular Sensitivities \_\_\_\_\_

Do You Wear Contacts? \_\_\_\_\_

Provide a Checklist of Previous Illnesses or Exposure to Hazardous Chemicals \_\_\_\_\_

\_\_\_\_\_

What medications are you presently using? \_\_\_\_\_

\_\_\_\_\_

Do you have any medical restrictions? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Name, Address, and Phone Number of personal physician: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

I am the individual described above. I have read and understand this HASP.

\_\_\_\_\_

Signature

\_\_\_\_\_

Date